

Math Performance Standard – Numeration A1.3.1

Scientific Notation

- Write the missing exponent: $954 = 9.54 \times 10^?$
a.) 1 b.) 2 c.) 3 d.) 4
- The Earth is about 93 million miles from the Sun. Write this number in scientific notation.
a.) 93×10^6 b.) 93×10^7 c.) 9.3×10^6 d.) 9.3×10^7
- Mars is about 1.42×10^8 miles from the Sun. Write this number in standard form.
a.) 142 b.) 142,000 c.) 142,000,000 d.) 14,200,000,000
- Write in scientific notation: 0.00000672
a.) 672×10^{-8} b.) 6.72×10^{-7} c.) 6.72×10^{-6} d.) 6.72×10^{-7}
- Write in standard form: 5.2×10^{-7} .
a.) 0.000000052 b.) 0.00000052 c.) 0.0000052 d.) 0.000052
- Divide 6×10^5 by 3×10^4 .
a.) 2 b.) 20 c.) 3 d.) 30 e.) 200

Ordering Real Numbers

- Order the following values from least to greatest.

$$2.25, \sqrt{4}, 25\%, 2^2, -2.75, \frac{5}{2}$$

Answer: _____, _____, _____, _____, _____, _____

- Order the following values from least to greatest.

$$3^2, -\frac{7}{2}, \frac{7}{3}, \pi, 30\%, 3.55, .39999$$

Answer: _____, _____, _____, _____, _____, _____, _____

9. Order the following values from least to greatest.

5.2, $\sqrt{25}$, 5.02, $\frac{25}{4}$, -5, 50%

Answer: _____, _____, _____, _____, _____, _____

10. Order the following values from least to greatest.

1^{10} , -10, $\sqrt{105}$, 10%, $\frac{100}{9}$, -10.01, 10.9

Answer: _____, _____, _____, _____, _____, _____, _____

11. Order the following values from least to greatest.

-17.9, -17.11, -17.1, $\frac{52}{3}$, 170%, $\sqrt{17}$

Answer: _____, _____, _____, _____, _____, _____

12. Order the following values from least to greatest.

$\frac{19}{4}$, 450%, $\sqrt{17}$, -4.5, .4 001, 0

Answer: _____, _____, _____, _____, _____, _____

13. Order the following values from least to greatest.

5.3209×10^5 , 1.801×10^6 , 9.756×10^{-5} , 2.4×10^{-1}

Answer: _____, _____, _____, _____

Math Performance Standard – Numeration A1.2.2

Identifying Place Value

14. In the number 3,678,950, what digit is in the hundred thousands place?

a.) 3 b.) 6 c.) 7 d.) 8 e.) 9

15. In the number 120.579, what digit is in the hundredths place?

a.) 1 b.) 2 c.) 0 d.) 5 e.) 7

16. In the number 8910.25, what digit is in the tenths place?

- a.) 1 b.) 2 c.) 5 d.) 0 e.) 9

17. Write the number twenty-eight million, fifty-seven thousand, one hundred sixty-two and five tenths.

- a.) 28,570,162. 5 b.) 28,057,162.05 c.) 28, 057,162.5 d.) 28,570,162.5

18. In which number does 3 have the greatest value?

- a.) 9,831 b.) 387 c.) 73,945 d.) 300,001

19. Which number represents 58,792,001.06?

Fifty-eight million, seven hundred ninety-two, one and six hundredths.

Fifty-eight million, seven hundred ninety-two thousand, one and six tenths.

Fifty-eight million, seven hundred ninety-two thousand, one and six hundredths.

Fifty-eight million, seven hundred ninety-two, one hundred six.

Rounding

20. A new TV sells for \$494. Round this to the nearest \$10.

- a.) \$500 b.) \$400 c.) \$490 d.) \$590

21. The distance from here to Fairbanks is 315 miles. Round this to the nearest 100 miles.

- a.) 320 miles b.) 310 miles c.) 400 miles d.) 300 miles

22. The dance committee made \$2565 from ticket sales and concessions. Round this to the nearest thousand dollars.

- a.) \$3000 b.) \$2600 c.) \$2500 d.) \$2570

23. Which number rounds to 700 when rounded to the nearest 10?

- a.) 692 b.) 694 c.) 695 d.) 706

24. Which number does not round to 500?
a.) 451 b.) 490 c.) 524 d.) 550

25. Round 3.0927 to the nearest thousandth.
a.) 3.093 b.) 3.100 c.) 3.000 d.) 3.092

26. Students in France receive an average of 7.9 hours of homework each week, while students in the United States receive an average of 4.6 hours of homework each week. Round each number to the nearest whole number and find the difference. Show your work!

Math Performance Standard – Numeration A1.4.3

Operations Using Fractions, Decimals, and Integers

27. The North family drove 330 miles last weekend. Their car gets 14 miles per gallon. If gasoline costs \$2.02 per gallon, how much did the North family spend on gasoline? Show your work!

28. Quiana had \$1009 in her bank checking account. She deposited \$599 and wrote a check for \$489. How much does she have in her account now? Show your work!

29. Six pounds of bananas cost \$2.94. What is the cost of a single banana if there are 7 bananas in a single pound?

a.) \$2.52 b.) \$0.42 c.) \$0.07 d.) \$0.06

30. On Thursday, about 2800 people visited Denali Park. On Saturday, 2.5 times that number of people visited the park. About how many more people visited the park on Saturday?

a.) 1120 b.) 4200 c.) 7000 d.) 9800

31. Find the difference in weight between 2.4 grams and 0.24 grams.

a.) 0 grams b.) 0.216 grams c.) 2.16 grams d.) 0.226 grams

32. Five friends shared the cost of some halibut appetizers. The cost was \$9.45. How much did each person contribute?

- a.) \$47.25 b.) \$2.30 c.) \$2.16 d.) \$1.89

33. Over the weekend, William spent $1\frac{3}{4}$ hours writing an essay, $\frac{1}{2}$ hour doing his math, and $2\frac{1}{6}$ hours doing a history project. How much time did he spend on homework? Show your work!

34. Lee caught a fish that weighed $6\frac{1}{4}$ pounds. If he gave $2\frac{1}{2}$ pounds to his friend, how much fish did he have left? Show your work!

35. The cheerleaders had $8\frac{1}{3}$ dozen cookies to sell at their bake sale. If they sold $\frac{3}{4}$ of the cookies, how many cookies did they sell? Show your work!

36. The highest temperature for the day was 14° and the lowest temperature was -10° . What was the difference between the highest temperature and the lowest temperature?

- a.) 4° b.) 24° c.) 6° d.) -4°

37. Hector had \$794 in his checking account. He wants to pay his rent, which is \$1225. How much does he need to deposit to be able to cover his rent check?

- a.) \$1571 b.) \$521 c.) \$431 d.) \$2019

Math Performance Standard – Numeration A1.4.7

Properties of Real Numbers

38. Which expression is the same as $(5 \times 8) \times 7$?

- a.) $5 \times (8 + 7)$ b.) $5 \times (8 \times 7)$ c.) $5 + (8 \times 7)$ d.) $(5 + 8) \times 7$

39. Which of these expressions is NOT true?

- a.) $-47 + 0 = -47$ b.) $1 \times 68.1 = 68.1$ c.) $0 \times 4\frac{1}{2} = 4\frac{1}{2}$ d.) $0 + 9.5 = 9.5 + 0$

40. Which expression is equivalent to $7(4 + 3)$?

- a.) $(7 + 4) \times (7 + 3)$ b.) $11 + 10$ c.) $7 \times 4 + 7 \times 3$ d.) $28 + 3$

41. Which expression is the same as $(12 \times 13) + (12 \times 14)$?

- a.) $12 \times (13 + 14)$ b.) $12 \times (13 \times 14)$ c.) $(12 + 13) \times 14$ d.) $(12 \times 13) + 14$

42. Which expression is equivalent to $6(9+3)$?

- a.) $(6 \times 9) + (6 \times 3)$ b.) $6 \times 9 + 3$ c.) $15 + 9$ d.) $54 + 3$

43. Which of these expressions is true?

- a.) $3(5 + 4) = 19$ b.) $2.3 - 5.4 = 5.4 - 2.3$ c.) $3 + (4 + 5) = (3 + 4) + 5$

Math Performance Standard – Numeration A1.3.5

Relationship of Fractions to Decimals, Percents, Ratios, and Proportions

44. Written as a percent, the decimal .75 is equal to

- a.) .0075% b.) 7.5 % c.) 75% d.) 750%

45. Written as a fraction, 60% is equal to _____.

- a.) $\frac{60}{100}$ b.) $\frac{60}{1}$ c.) $\frac{1}{6}$ d.) $\frac{6}{100}$

46. Written as a fraction, the decimal .34 is equal to _____.

- a.) $\frac{34}{10}$ b.) $\frac{34}{1}$ c.) $\frac{17}{50}$ d.) $\frac{1}{34}$

47. Written as a decimal, 24% is equal to _____.

- a.) 2400.0 b.) 0.24 c.) 240.0 d.) 2.4

48. An advertisement states 6 out of 10 people prefer Coke to Pepsi. Which of the following is NOT a correct method of representing this information?

- a.) 6% b.) 6 : 10 c.) $\frac{3}{5}$ d.) 60% e.) 6 to 10

49. Express $\frac{3}{8}$ as a decimal. Show your work!

50. Express 78.69% as a decimal. Explain how you arrived at your answer!

51. Express .65 as a fraction in simplest form. Show your work!

52. UAA won 12 hockey games and lost 6 games. (Put answers in simplified fraction form.)

- a.) Give the ratio of the games won compared to the games lost.
b.) Give the ratio of the games lost to the number of games played.

53. Carlotta earned \$375 the first week she worked at her new job. She earned \$405 the second week, \$430 the third week, and \$425 the fourth week. What is the ratio of her first week's earnings to her total earnings for the month? Show your work!

54. A pizza was cut into 12 pieces. Stanley was very hungry and ate 9 of the pieces.

(For a – c, leave all answers in simplified form and show your work!)

- a.) What percent of the pizza did Stanley eat?
b.) What fraction of the pizza was left?
c.) Give the ratio of the number of pieces Stanley ate to the number of pieces he left for his friends.

55. Paulo goes out to lunch 3 out of every 5 days of school. Write and solve a proportion that shows how to find the number of days he will go out to lunch in 20 days. Show and explain your steps!

56. The Key Club raised \$144 for a community project. Peter raised \$108 of the total by himself. What percent of the total did Peter raise? Show your work!

57. Which value of x will make the following proportion true? $\frac{x}{14} = \frac{15}{42}$

- a.) 3 b.) 4 c.) 5 d.) 6

58. On a map, 1 inch represents 50 miles. How many miles does 5 inches represent? Set up a proportion and solve. Show all work!

Math Performance Standard – Numeration A1.4.4

Exponential Expressions

59. If $x = 2$ and $y = 4$, what is the value of $x^3 + y$?
a.) 10 b.) 12 c.) 14 d.) 216

60. If $x = 5$, what is the value of $3x^2$?
a.) 75 b.) 225 c.) 30 d.) 900

61. Find the missing exponent in $2^? = 8$.
a.) 6 b.) 3 c.) 2 d.) 4

62. Which of the following is NOT equal to 9^4 ?
a.) 36 b.) $9 \times 9 \times 9 \times 9$ c.) 6561 d.) 81×81

63. Which of the following does NOT equal $5^2 \cdot 3^2$?
a.) $10 \cdot 6$ b.) 15^2 c.) $25 \cdot 9$ d.) 225

64. Simplify $\frac{2 \cdot 5^5}{5^4}$. Show your work!

Math Performance Standard – Numeration A1.3.6

Divisibility Rules

65. Which of the following numbers is divisible by 4?
a.) 174 b.) 492 c.) 1994 d.) 3018

66. Which of the following numbers divides evenly into 819?
a.) 2 b.) 3 c.) 5 d.) 6 e.) 10

67. Which number is a factor of 1064?

- a.) 3 b.) 5 c.) 6 d.) 8 e.) 9

68. Which number is NOT a divisor of 32,064?

- a.) 2 b.) 3 c.) 4 d.) 8 e.) 9

69. Which number is NOT a factor of 3780?

- a.) 2 b.) 3 c.) 4 d.) 5 e.) 6 f.) 7 g.) 8

70. How many whole numbers between 0 and 100 are divisible by 6?

Show how you arrived at your answer!

71. How many whole numbers greater than 0 and less than 100 are divisible by 2?

- a.) 20 b.) 24 c.) 25 d.) 48 e.) 49 f.) 50

Prime and Composite Numbers

72. List all the prime numbers between 20 and 30. Explain why they are prime numbers.

73. Which of the following numbers is a prime number?

- a.) 54 b.) 71 c.) 85 d.) 69

74. Which of the following numbers is a composite number?

- a.) 2 b.) 9 c.) 19 d.) 37

75. What number is neither prime nor composite? Why?

76. What is the next composite number following 8? How can you tell if a number is a composite number?

77. The next four prime numbers after 11 are:

- a.) 13, 17, 19, 23 b.) 13, 15, 17, 19 c.) 13, 17, 19, 21 d.) 13, 17, 19, 27

Prime Factorization

78. Find the prime factorization of 54.

- a.) 2×27 b.) 6×9 c.) $2 \times 3 \times 3 \times 3$ d.) $2 \times 2 \times 3 \times 3$

79. $3 \times 3 \times 5 \times 5 \times 5$ is the prime factorization of which of the following numbers?

- a.) 21 b.) 24 c.) 90 d.) 135 e.) 1125

80. Which of the following is NOT equivalent?

- a.) $2 \times 2 \times 2 \times 5 \times 7$ b.) $2^3 \cdot 5 \cdot 7$ c.) 43 d.) 280

81. Give the prime factorization of 96. Show how you arrived at your answer!

82. Give the prime factorization of 150. Show how you arrived at your answer!

83. Explain why $2 \times 4 \times 6$ is not the prime factorization of 48.

Order of Operations

84. Simplify: $18 \div 3(8 - 5) + 7$. Show your work!

85. Simplify: $7 + 5 \cdot 3 = \underline{\hspace{2cm}}$.

- a.) 22 b.) 36 c.) 15 d.) 105

86. Simplify: $60 \div 12 - 2 \cdot 3 - 1 = \underline{\hspace{2cm}}$.

- a.) 8 b.) 12 c.) -2 d.) 1

87. Simplify: $\frac{(24 + 12) + 2(5 - 7)}{10 - 2 \cdot 4}$. Show all steps!

88. Simplify: $\frac{1}{3} + \frac{2}{3} \cdot \frac{3}{5}$

- a.) $\frac{3}{5}$ b.) $\frac{11}{15}$ c.) $\frac{3}{8}$ d.) $\frac{3}{10}$

89. Simplify: $\frac{42 \div 7}{14 - 4 \cdot 2}$

- a.) $\frac{3}{10}$ b.) 1 c.) 2 d.) $\frac{6}{20}$

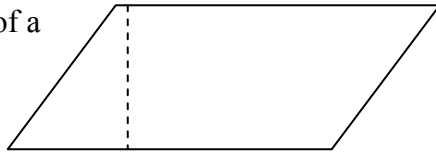
Math Performance Standard – Measurement A2.3.2

Measuring an Object

90. a.) Measure the dimensions to the nearest tenth of a centimeter, including the height.

b.) Find the perimeter of the parallelogram.

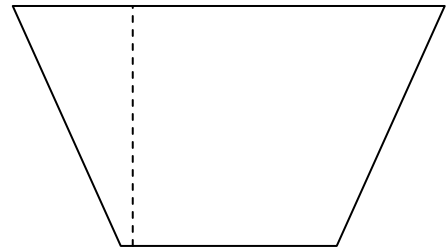
c.) Find the area of the parallelogram.



91. a.) Measure the dimensions to the nearest eighth of an inch, including the height.

b.) Find the perimeter of the trapezoid.

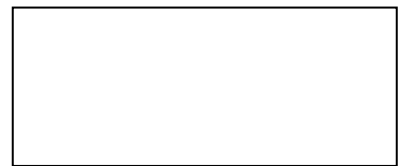
c.) Find the area of the trapezoid.



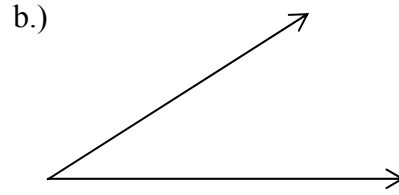
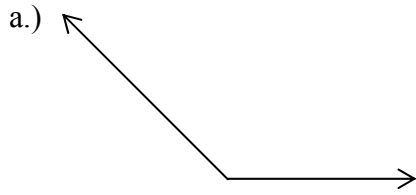
92. a.) Measure the dimensions to the nearest quarter of an inch.

b.) Find the perimeter of the rectangle.

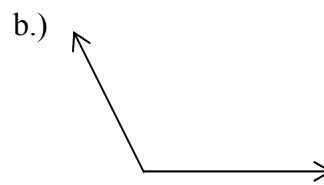
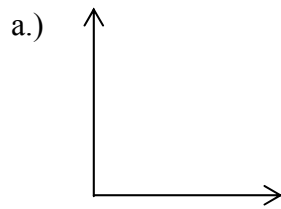
c.) Find the area of rectangle.



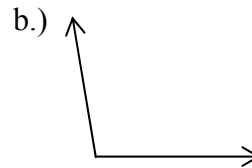
93. Tell if each angle is acute, right, or obtuse and use your protractor to give the measure to the nearest degree.



94. Tell if each angle is acute, right, or obtuse and use your protractor to give the measure to the nearest degree.



95. Tell if each angle is acute, right, or obtuse and use your protractor to give the measure to the nearest degree.



Math Performance Standard – Measurement A2.4.2

Converting from One Measurement System to Another

96. The map says it is 335 miles to Fairbanks. How many kilometers is that?
Show your work! (Use 1 mile = 1.6 kilometers.)

97. Brian set his speedometer to record the mileage while on vacation. His trip set said he had traveled 1,758 miles. How many kilometers did he travel? Round your answer to the nearest kilometer. Show your work! (Use 1 mile = 1.6 kilometers.)

98. You are touring Europe (lucky you!) and the weather report says the high temperature today will be 25° Celsius. What is the temperature in Fahrenheit? Show your work. Use
$$\text{Fahrenheit} = \frac{9}{5} \text{ Celsius} + 32.$$

99. If freezing is 32° Fahrenheit, what is freezing in Celsius?

Use
$$\text{Celsius} = \frac{5}{9}(F - 32).$$
 a.) 5/9° b.) 32° c.) 17.33° d.) 0°

100. Your grandmother is visiting from Canada and asked you what the temperature is today. Your thermometer reads 83° Fahrenheit. Convert this temperature into Celsius for your grandmother, please. Show your work. Use
$$\text{Celsius} = \frac{5}{9}(F - 32).$$

101. You need 45 liters of gasoline to fill up a tank in your boat. Your gas can says it holds 6 gallons. Is this enough to fill up your boat? Show your work. Tell if you should fill only a portion of your gas can, if you need more than one gas can, or if your can is exactly the right size. (Use 1 gallon = 3.785 liters.)

102. You ran out of gas and had to land your plane on a lake. Luckily, there is a man living on the lake that has offered to give you some gas. He says he can spare 20 liters. You still have to fly a few miles back to Lake Hood and need to make sure you have enough gas to get there before you take off. How many gallons is 20 liters? Show your work! (Use 1 liter = 0.264 gallons.)

Converting Measurements Within the Same System

103. You are carpeting your living room, hallway, and two bedrooms. The living room is 20 feet by 18 feet, the hallway is 3 feet by 10 feet, and each of the bedrooms is 12 feet by 14 feet. How many square yards of carpet do you need to buy? (Remember 1 square yard = 9 square feet.) Show all your work!

104. Change each smaller unit to a larger unit:

a.) 80 ounces = _____ pounds

b.) 4,000 pounds = _____ tons

c.) 8 quarts = _____ gallons

d.) 12 cups = _____ pints

105. Change each larger unit to a smaller unit:

a.) 5 gallons = _____ quarts

b.) 4 pints = _____ cups

c.) 2.5 pounds = _____ ounces

d.) 6.25 cups = _____ ounces

106. Which is equivalent to 1 meter?

- a.) 10 centimeters b.) 100 centimeters c.) 100 kilometers d.) 1,000 kilometers

107. If 10 millimeters equal 1 centimeter, how many millimeters do 8 centimeters equal?

- a.) 800 b.) 8 c.) 80 d.) .8

108. The measure of the length of a pencil is about

- a.) 2 millimeters b.) 20 liters c.) 20 centimeters d.) 2 kilometers

109. A kilogram would best be used to measure

- a.) a paper clip b.) a car c.) a bag of flour d.) a grain of sugar

110. Andrea was 4 feet 10 inches tall the last time her height was measured. If she has grown 6 inches since then, how tall is she now? Show your work! Be sure to simplify your answer and leave it in feet and inches.

111. The length of a guitar is about 30 units. What unit was used to measure the guitar?

- a.) feet b.) inches c.) yards d.) miles

112. About how many feet are in 5 miles?

- a.) 5000 b.) 6000 c.) 20,000 d.) 26,000

113. I want to put a runner in my hallway. I would like the rug to be 1 yard, 2 feet, 11 inches long. When I went to the store to purchase the rug, the measurements were in inches only. How many inches long is the rug I need?

- a.) 36 b.) 60 c.) 70 d.) 71

114. 18 days =

- a.) 2 weeks, 4 days b.) 2 weeks, 3 days c.) 3 weeks, 4 days d.) 3 weeks

115. A 235-centimeter long board is cut into five equal pieces. How long is each piece
a.) 47 cm b.) 47 mm c.) 470 cm d.) 4.7 cm

116. Ricardo must drink 8 cups of water per day. So far, he has drunk 12 ounces. How many more cups of water does he have to drink? Show your work!

117. If Carol ran one mile and walked 420 yards, how many feet has she traveled?
a.) 6540 feet b.) 1260 feet c.) 5700 feet d.) 5280 feet

118. You are traveling at a constant speed of 65 miles per hour. How far will you travel in 15 minutes? Show your work!

119. If a pack of paper contains 500 sheets and each sheet is 0.1 mm thick, how high is the pack of paper?
a.) 0.5 cm b.) 5 cm c.) 50 cm d.) 500 cm

120. If a car travels 120 miles on 15 gallons of gas, how far can it travel on 20 gallons of gas?
a.) 180 miles b.) 160 miles c.) 250 miles d.) 2.5 miles

121. How much longer is a wire 20 ft. 3 in. than a wire 8 ft. 9 in?
a.) 11 ft. 4 in. b.) 11 ft. 6 in. c.) 12 ft. 4 in. d.) 12 ft. 6 in.

122. What is the most reasonable measurement for the size of a computer screen?
a.) 15 inches b.) 15 centimeters c.) 15 feet d.) 15 millimeters

Math Performance Standard – Measurement A2.2.3 & A2.3.4

Scale Drawings

123. On a map, 1 inch represents 50 miles. If two cities are 2.5 inches apart on the map, what is the actual distance between them? Show your work!

124. On a blueprint of a building, 1 centimeter represents 5 meters. How many centimeters would represent a wall 20 meters long? Show your work!

125. On a map, one inch represents 60 miles. How many inches represent 420 miles? Show your work!

126. On a map, 1 centimeter represents 30 kilometers. How many centimeters on the map would represent 120 kilometers?

- a.) 1 b.) 90 c.) 4 d.) 150

127. The scale on a map is 1 inch = 5 miles. If you want to draw a circle representing all points 25 miles away from your school, what would the radius of your circle equal?

- a.) $\frac{1}{5}$ inch b.) 25 in. c.) 125 in. d.) 5 in.

128. You are making a scale drawing of your dream house, using a scale of $\frac{1}{4}$ inch = 5 feet. What is the scale length (the length on your drawing) of your game room if you want the actual room to be 25 feet long? Show your work!

129. Given a scale of $\frac{1}{2}$ in = 4 ft, find the actual length if the scale length is $2\frac{3}{4}$ in.

- a.) 22 ft. b.) $5\frac{1}{2}$ ft. c.) 11 ft. d.) 19 ft.

130. Given a scale of $\frac{1}{4}$ inch = 6 ft, find the scale length for 33 feet.

- a.) $1\frac{1}{8}$ in. b.) $1\frac{3}{8}$ in. c.) $49\frac{1}{2}$ in. d.) $1\frac{1}{8}$ yd.

131. Given a scale of $\frac{1}{2}$ inch = 10 feet, make a scale drawing of the floor of a house that is 65 feet by 90 feet.

Math Performance Standard - Measurement A2.3.5

Elapsed Time

132. Your plane leaves at 10:10 A.M. and lands at 3:35 P.M. How long was the flight?

- a.) 3 hours, 25 min. b.) 5 hours, 25 min. c.) 6 hours, 25 min. d.) 7 hours, 25 min.

133. What is another way to express 74 minutes?

- a.) 1 hour 24 min. b.) 1 hour 14 min. c.) 1 hour 12 min. d.) 1 hour 8 min.

134. We left for a bike ride at 9:45 A.M. and returned at 12:30 P.M. How long did our ride take? Show your work!

135. If you worked 5 hours and 15 minutes yesterday and 6 hours and 50 minutes today, how long have you worked altogether? Show your work!

136. LouAnne is working for \$5.15 an hour. She worked from 6:30 P.M. until 11:45 P.M. How much money did she earn?

a.) \$20.32 b.) \$27.04 c.) \$16.73 d.) \$13.83

137. It took Dan two workdays plus five hours to build a deck. If there are eight work hours in a workday, how many minutes did it take Dan to build the deck?

a.) 1140 minutes b.) 465 minutes c.) 1260 minutes d.) 3060 minutes

138. You are cooking a turkey for dinner. According to the weight chart, you need to cook it for $5\frac{1}{2}$ hours. What time should you put it in the oven if you want to eat around 6.15 P.M.? Show your work!

139. The bus for Fairbanks leaves at 8:15 A.M. and reaches Fairbanks $7\frac{1}{2}$ hours later. What time will you arrive in Fairbanks? Show your work!

140. Your plane for Seattle leaves at 1:05 A.M. and you are told to be at the airport $1\frac{1}{2}$ hours early. What time do you need to be at the airport? Show your work!

141. It is 6:00 A.M. in Anchorage and you need to call your parents who are visiting your sister who is at college in Montana. Anchorage is the Alaska Standard Time Zone and Montana is in the Mountain Time Zone, which is 2 hours ahead of Alaska Standard Time.

a.) What time is it in Montana?

b.) If your parents told you to call around 10:30 A.M., what time in Alaskan time should you place the call?

Math Performance Standard- Measurement A.2.2.6

Money Notation

142. a.) How much change should you give a customer if he gave you \$25 to pay for his purchase of \$22.49?

b.) Count the change back to him, please. (Start with \$22.49, 22.50, etc. and count up to \$25.00)

c.) List the pieces of change below:

___ pennies, ___ nickels, ___ dimes, ___ quarters, ___ ones, ___ fives, ___ tens

143. Meng has in his pocket 1 five-dollar bill, 3 one-dollar bills, 7 quarters, 2 dimes, 1 nickel, and 6 pennies. How much does he have altogether? Show your work!

144. You received \$17.02 change from a \$20 bill when you purchased a pen. What was the cost of your pen?

a.) \$3.98 b.) \$3.08 c.) \$2.98 d.) \$2.08

145. You are buying a sweatshirt for \$42.50, jeans for \$58.00, and shoes for \$71.95. You only have \$100 dollar bills in your pocket!

a.) How much will you give the clerk?

b.) How much change will you receive?

146. A sweater cost \$79, but you bought it on sale for \$59.95. How much did you save?

a.) \$19.05 b.) \$20.05 c.) \$20.15 d.) \$138.95

147. During a sale, you bought 2 pairs of jeans for \$30 a pair, 3 t-shirts at \$12 a shirt, and 1 jacket at \$45.75. What was the total cost of your purchase? Show your work!

148. Emilio bought 2 CD's on sale. Each CD cost \$11.99. He gave the clerk \$25. What was his change?

a.) \$0.02 b.) \$1.02 c.) \$1.12 d.) \$13.02

149. What is the smallest amount of coins you can use to make \$.96 if you do not use a half-dollar? a.) 8 b.) 7 c.) 6 d.) 5

List or draw the coins you will use!

Math Performance Standard – Estimation and Computation A3.4.1

Making Reasonable Estimates

150. Michael is a car salesman, working on commission. This week he made 42% more money than last week. Last week he made \$892. Use estimation to find about how much more did he make this week?

- a.) \$360 b.) \$450 c.) \$320 d.) \$300

151. Which would be the best way to estimate $34\frac{3}{22} \times 17\frac{17}{22}$?

- a.) 34×18 b.) 34×17 c.) 35×18 d.) 35×17

152. I had \$79 when I left home today. I spent 25% of my money. About how much did I have left?

- a.) \$20 b.) \$40 c.) \$50 d.) \$60

153. I just bought a new car and drove 273 miles without stopping. What is the best estimate of my average speed if I drove for 6 hours?

- a.) 40 mph b.) 45 mph c.) 50 mph d.) 55 mph

154. My car holds 22 gallons of gasoline. I am on empty and pull into the nearest gas station.

a.) If gas costs \$2.04 per gallon, estimate how much will I pay to fill up my car. Show your work!

b.) Is your estimate higher or lower than the actual cost? Explain!

155. The soccer club sold 133 bottles of water at the soccer tournament last weekend. They charged \$.80 per bottle. Which is the best estimate of how much money the club collected?

- a.) \$10 b.) \$80 c.) \$100 d.) \$200

Math Performance Standard – Estimation and Computation A3.3.2

Using Estimation to Check Reasonableness of Results

156. About how much is 2.09×68 ?

- a.) 1400 b.) 210 c.) 140 d.) 21

157. Estimate $\frac{194 + 697}{19}$.

- a.) 20 b.) 40 c.) 200 d.) 400

158. Which is the best estimate of 153×298 ?

- a.) 30,000 b.) 40,000 c.) 45,000 d.) 60,000

159. About how much is 75% of \$9.88?

- a.) \$75.00 b.) \$7.50 c.) \$5.00 d.) \$6.30

160. The closest estimate of $8,151 + 3,902$ is

- a.) 5,000 b.) 10,000 c.) 11,000 d.) 12,000

161. If you make \$515 each week, estimate how much do you make in one year?

- a.) Show your estimation and all your work.
b.) Is your estimation higher or lower than the actual amount you will make?
c.) How do you know if it is higher or lower?

162. Last year, 673 juniors in the Anchorage School District took the PSAT test. The total of juniors in the district was 2,789. Use estimation to determine what percent of the juniors took the PSAT.

- a.) Show your estimation and all your work.
b.) Is your estimation higher or lower than the actual number of juniors taking the test?
c.) How do you know if it is higher or lower?

Math Performance Standard – Estimation, Computation A3.4.3, A3.4.1

Using Powers

163. Which of the following is equivalent to: $(2^3 + 2^3) + (5^2 - 5)$

- a.) 17 b.) 21 c.) 36 d.) 41

164. Which of the following is equivalent to: $(5^3 + 5^2) - (5^2 + 5)$

- a.) 10 b.) 120 c.) 130 d.) 20

165. Which of the following is equivalent to: $(4^3 - 2^3) + (4^2 - 2) - (4 + 2^2)$

- a.) 62 b.) 10 c.) 2 d.) 54

166. Which of the following is equivalent to: $\frac{(2^3 \cdot 2)^2}{2^3} + \left(\frac{1}{2}\right)^3$

- a.) $24\frac{1}{6}$ b.) $24\frac{1}{8}$ c.) $32\frac{1}{8}$ d.) $4\frac{1}{8}$

167. Which of the following is equivalent to: $\frac{(3^4 - 3^3)}{(3^2)} - \left(\frac{2}{3}\right)^2$

- a.) $5\frac{5}{9}$ b.) $-\frac{1}{9}$ c.) $-\frac{1}{6}$ d.) $5\frac{1}{3}$

168. Which of the following is equivalent to: $\left(\frac{3}{5}\right)^2 + \left(\frac{4}{5}\right)^2$

- a.) 1 b.) 5 c.) $\frac{7}{5}$ d.) $\frac{14}{5}$

Math Performance Standard – Estimation and Computation A3.3.5

Converting Between Equivalent Fractions, Decimals, Percents, and Proportions

169. Convert 45% to a decimal.

- a.) 45 b.) 4500 c.) 0.45 d.) 0.045

170. Convert 0.9 to a percent.

- a.) 0.009% b.) 0.9% c.) 9% d.) 90%

171. Write 35% in decimal form.

- a.) 0.35 b.) 0.035 c.) 0.0035 d.) 3500

172. You have 15 Cokes in your refrigerator and 5 Dr. Peppers. What percent of your sodas are Dr. Peppers?

- a.) $\frac{1}{5}$ % b.) 0.25% c.) 5% d.) 25%

173. Write 0.75 as a fraction or a mixed number.

- a.) $\frac{3}{40}$ b.) $\frac{3}{4}$ c.) $\frac{4}{3}$ d.) $7\frac{1}{2}$

174. Write $3\frac{1}{4}$ as a decimal.

- a.) 31.4 b.) 3.25 c.) 3.14 d.) 0.31

175. You have a recipe that calls for 0.25 pounds of cheese. You bought a piece of cheese weighing $\frac{2}{5}$ lb. You bought

- a.) not enough b.) too much c.) just the right amount

176. Write 15% as a fraction.

- a.) $\frac{1}{15}$ b.) $\frac{3}{10}$ c.) $\frac{3}{20}$ d.) $\frac{2}{30}$

177. Write $\frac{7}{8}$ as a percent.

- a.) 87.5% b.) 78% c.) 0.875% d.) 87%

178. About 30% of the earth's surface is covered with land and the rest is covered with water. Write a fraction showing the portion of the earth's surface covered by water.

- a.) $\frac{7}{100}$ b.) $\frac{3}{10}$ c.) $\frac{70}{1000}$ d.) $\frac{7}{10}$

Math Performance Standard – Estimation and Computation A3.4.6

Using Ratios and Proportions to Solve Fraction and Percent Problems

179. On a field trip to the Native Heritage Center, there were 9 adults and 51 students. What percent of the people on the field trip were adults?

- a.) about 2% b.) 56% c.) 85% d.) 15%

180. The sales at the school store for 5 days totaled \$860. If the sales continue at the same rate, what will be the total sales for 30 days?

- a.) \$2,500 b.) \$4,300 c.) \$5,160 d.) \$25,800

181. Your rent was increased from \$400 to \$460 per month. What was the percent of increase in your rent?

- a.) 13% b.) 15% c.) 20% d.) 60%

182. Your best friend just purchased a sound system on sale for \$770. The original price was \$1100. What was the percent of discount?

- a.) 330% b.) 70% c.) 43% d.) 30%

183. You and two of your friends ordered a large pepperoni pizza. You ate 2 pieces, which was 25% of the pizza. How many pieces were left?

- a.) 8 b.) 6 c.) 4 d.) 2

184. Rollo's relatives are visiting and he has to rent a van to drive them around sightseeing. He found a van that rents for \$212 for 4 days. At this rate, what would it cost him to rent the same car for 10 days?

- a.) \$2120 b.) \$520 c.) \$583 d.) \$530

185. Yogi and Milo went to Lucky Wishbone for lunch. The bill was \$15 and they left a 15% tip. How much did they pay in all for lunch?

- a.) \$2.25 b.) \$15.15 c.) \$16.25 d.) \$17.25

186. Herman nets \$375 per week. (This is how much he brings home after taxes.) He puts \$45 per week into his savings account. What percent of his net earnings does he save? Show your work!

187. Andreas bought a book on sale for 40% off the original price. The original price was marked \$30. How much did Andreas pay for the book?

- a.) \$12 b.) \$18 c.) \$28.80 d.) \$42

188. The shirt you want is on sale for \$22.75. It usually sells for \$35. What is the percent of discount on the shirt?

- a.) 65% b.) 54% c.) 35% d.) 12.25%

189. Angelica runs 1.5 hours every day. How many hours does she run in 4 weeks?

- a.) 42 hours b.) 10.5 hours c.) 6 hours d.) 5.5 hours

190. The football team is selling t-shirts to make money for a trip. The coach made this chart to help them figure out how much to charge people:

Number of shirts	1	2	3	4
Total Cost	\$12	\$24	\$36	\$48

The president of the booster club wants to help the team by purchasing 25 t-shirts!

a.) Use the pattern on the table to write an equation relating the number of shirts (s) and the total cost (T).

b.) Use your equation to find the total cost for 25 t-shirts.

Math Performance Standard – Functions and Relationships A4.3.1

Patterns

191. What is the missing number in this pattern?

4, 12, 5, 11, 6, 10, _____, 9, 8

- a.) 7 b.) 8 c.) 9 d.) 10

192. What is the next number in this sequence?

34, 33, 31, 27, 19, _____

- a.) 1 b.) 3 c.) 9 d.) 16

193. Find the 11th term in this pattern:

3, 6, 9, 12, 15, 18.....

Explain how the pattern works!

194. Which of the following best describes how you could find the second number if you know the first number of these ordered pairs? (4, 10), (7, 16), (15, 32), (25, 52)

- a.) Multiply the first number by 3 and subtract 2.
b.) Add 6 to the first number.
c.) Multiply the first number by 2 and add 2.
d.) Multiply the first number by 2 and add 5.

195. What number will complete the chart?

2 x 1	2
22 x 11	242
222 x 111	24,642
2222 x 1111	?

- a.) 2,244,642 b.) 2,446,842 c.) 2,246,642 d.) 2,468,642

196. What would be the fifth sentence of this pattern?

7 x 8 = 56

70 x 80 = 5,600

700 x 800 = 560,000

Explain how you arrived at your answer.

197. What is the 5th fraction in the pattern?

$$\frac{2}{3}, \frac{4}{6}, \frac{6}{9}$$

- a.) $\frac{9}{12}$ b.) $\frac{8}{14}$ c.) $\frac{10}{15}$ d.) $\frac{8}{15}$

Math Performance Standard – Functions and Relationships A4.4.2

Linear and Quadratic Equations and Inequalities

198. Kenitra is renting a car for \$45 a day plus \$.12 a mile. She knows she will drive the car for 4 days, but is not sure how many miles she will drive.

A.) Which equation will give her the total she will pay if m represents the miles she drives?

a.) $T = (45)(4) + (.12)m$

b.) $T = (45)(.12) + 4m$

c.) $T = 45m + (.12)(4)$

d.) $T = (.12)(4) + 4m$

B.) If Kenitra drives 650 miles, how much will she pay? Use your equation and show your work!

199. Herbert gets paid \$8.25 per hour making sandwiches at the deli. Last week he earned \$264.

a.) Write an equation that will tell Herbert how many hours he worked. Let T = the total amount earned and h = hours worked.

b.) Solve your equation and tell how many hours Herbert worked last week.

200. Joslene is having a party. She can spend no more than \$65 and she has already bought some soda for \$7.95.

a.) Write an inequality that shows how much money she has left to spend on pizza and ice cream.

b.) Use your equation to find out how much Joslene can spend on pizza and ice cream.

201. A petsitter charges \$3 and hour for the first hour and \$2 and hour for each hour afterwards. Which equation shows how much she charges for 5 hours?

a.) $T = 3 \times 2 + 4$

b.) $T = 3 + 4 \times 2$

c.) $T = 3 + 5 \times 2$

d.) $T = 2 + 4 \times 3$

202. Fran earns \$13 per hour. Which math sentence below shows the number of hours she has to work to earn over \$1000?

a.) $13h = 1000$

b.) $13 - h > 1000$

c.) $13h > 1000$

d.) $13h < 1000$

How many hours does she need to work?

203. Hugo can save \$35 per month. He wants to buy some speakers for \$250. Which math sentence below shows the number of months he needs to save?

- a.) $35 + n = 250$ b.) $250 - n = 35$ c.) $35n \geq 250$ d.) $35n \leq 250$

How many months does he need to save?

204. Eugene gets paid \$.20 for every dandelion he digs. He can dig 50 dandelions in an hour.

a.) Write an equation that will tell you how much he makes. Let T represent the total he makes and h represents the hours he works.

b.) Use your equation to find out how much he can make if he works for 7 hours.

205. Katrina runs at least 4.5 miles each weekday and 6.5 miles on Saturdays and Sundays.

A.) Using M to represent the total miles she runs, and w to represent the number of weeks she runs, write an inequality that will show her total miles.

B.) Using your inequality, find how many miles she ran after four weeks.

- a.) 122 miles b.) 132 miles c.) 142 miles d.) 152 miles

206. The choir is selling candy as a fund-raiser for a trip to California. A box of candy costs them \$1.75 and they are selling them for \$4.50.

a.) Write an equation that will tell you how much money they can make. Let T represent the total money made and b represent how many boxes of candy they sell.

b.) How much will they make if they sell 120 boxes of candy?

Math Performance Standard – Functions and Relationships A4.4.3

Systems of Equations

207. Regie and Petunia caught a total of 56 salmon. Petunia caught 3 times as many fish as Regie.

A.) Which system of equations would you use to find how many fish each person caught?

- a.) $\begin{cases} r + p = 56 \\ p = 3r \end{cases}$ b.) $\begin{cases} r + p = 56 \\ r = 3p \end{cases}$ c.) $\begin{cases} r \cdot p = 56 \\ r + p = 3 \end{cases}$ d.) $\begin{cases} r + 3p = 56 \\ r = 3p \end{cases}$

B.) How many fish did each person catch?

208. Clancy and Nate earned a total of \$175. Nate earned \$19 more than Clancy. How much did each of them earn? Write two equations and solve the system. Show your work!

209. Blake and Justin scored a total of 46 points in the basketball game. If Justin scored 8 fewer points than Blake, how many points did each of them score? Show your work!

210. Solve the system of equations:

$$\begin{cases} x + y = 10 \\ y + 6 = x \end{cases}$$

- a.) $x = 2, y = 8$ b.) $x = 5, y = 5$ c.) $x = 8, y = 2$ d.) $x = 7, y = 3$

211. Kim and Kenny ate a whole bag of candy. Kenny ate twice as many pieces of candy as Kim. If there were 42 pieces of candy in the bag, how many did each person eat?

- a.) Kim ate 21 and Kenny ate 21. b.) Kim ate 28 and Kenny ate 14.
c.) Kim ate 12 and Kenny ate 30. d.) Kim ate 14 and Kenny ate 28.

212. The difference of two numbers is 6 and the sum of the two numbers is 32. What are the two numbers? Show your work!

213. Solve the system of equations:

$$\begin{cases} y = 3x - 2 \\ y = -4x - 2 \end{cases}$$

Show your work and check your answer!

Math Performance Standard – Functions and Relationships A4.3.5

Evaluating Formulas

214. How much will it cost to get your car fixed if parts cost \$30 and the shop charges \$35 per hour to fix the car, and it takes 3 hours to fix?

Use the formula: $T = (c \cdot 1.6) + (r \cdot h)$ where: T = total cost

c = cost of part

r = rate per hour to fix the car

h = hours worked

- a.) \$86 b.) \$105 c.) \$146 d.) \$153

215. The formula for the surface area of a ball (a sphere) is $S.A. = 4\pi r^2$.

Where: S.A. is total surface area

r is the radius

$\pi = 3.14$

Find the surface area of a ball that has a radius of 4 inches. Show your work!

216. The formula $d = 0.042s^2 + 1.1s$ gives the approximate number of feet, d , needed to stop a car on a dry road if the speed of the car is s miles per hour. How much farther will a car travel before stopping if it is going 50 miles per hour instead of 30 miles per hour? Show your work!

217. A human cannonball in the circus is fired upward from a cannon at 80 feet per second. The equation for the height of the human cannonball is $h = 80t - 16t^2$ where h is the height of the cannonball and t is the time in seconds that he is in the air. How high will the human cannonball be in 3 seconds?

- a.) 96 feet b.) 35 feet c.) 192 feet d.) 215 feet

218. The amount of interest earned when you deposit money into a savings account can be found by the formula $I = prt$, where:

I is the amount of money in the bank

p is the principal (amount of money you start with in the bank)

r is the rate of interest (be sure to change it into a decimal)

t is the time (years) you leave the money in the bank

Find the **total** amount of money you will have in your account if you deposit \$1200 from your Permanent Fund Divident into a savings account earning 3% interest and leave it in the bank for 6 years.

- a.) \$21,600 b.) \$1416 c.) \$216 d.) \$984

219. Jean Junction prices their merchandise using the formula: $P = 2c + s$,

where: P = selling price

c = cost of item

s = shipping expense

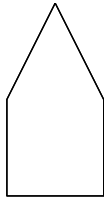
How much will Jean Junction sell a pair of jeans for if their cost is \$22.50 and shipping expenses are \$1.55 per pair? Show your work!

Math Performance Standard – Geometry A5.3.1

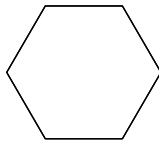
Identifying, Classifying & Comparing Polygons

220. Which of the following is a regular hexagon?

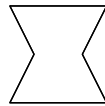
a.



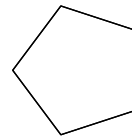
b.



c.



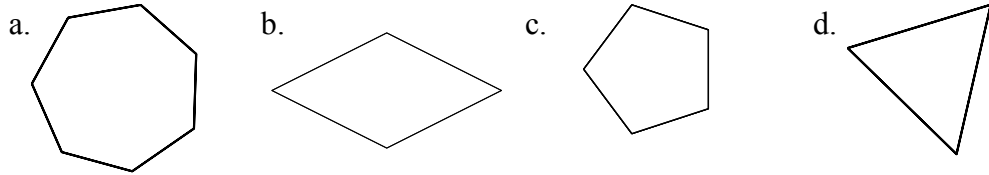
d.



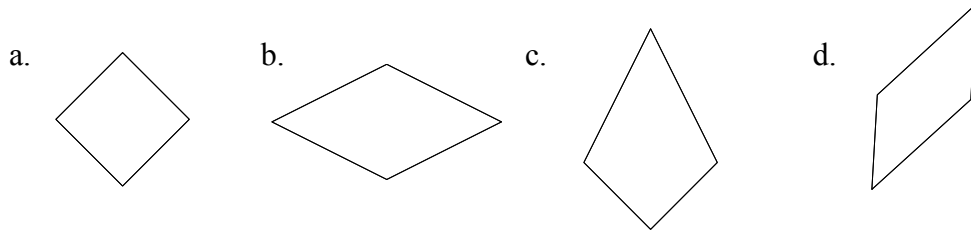
221. Order the polygons below in order from greatest number of sides to least number of sides.

Quadrilateral, hexagon, decagon, 15-gon, octagon, triangle, pentagon

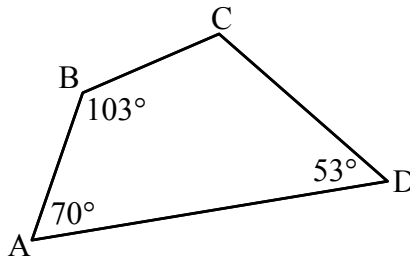
222. Which of the following is an irregular polygon?



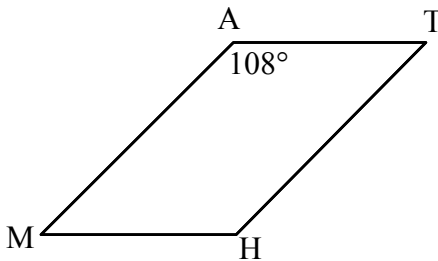
223. Which of the following is *not* a parallelogram?



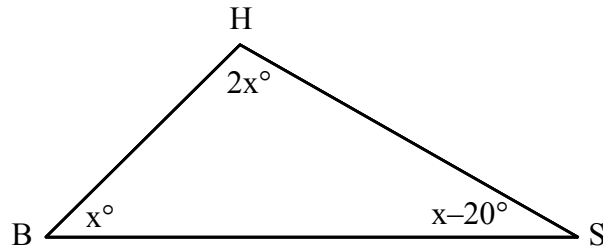
224. What is the measure of angle C in the quadrilateral below?



225. What is the measure of angle M in the parallelogram below?

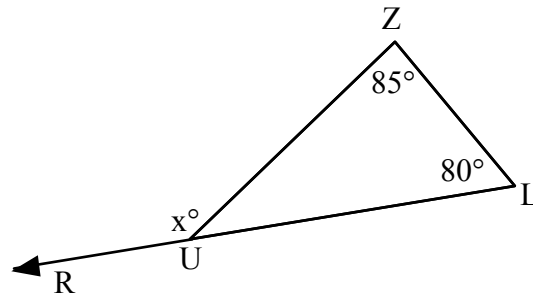


226. What is the measure of angle S in the triangle below?



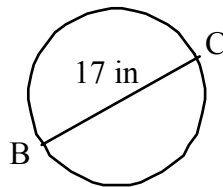
- a. 50° b. 20° c. 100° d. 30°

227. What is the value of x in the diagram below where angle RUL is straight?

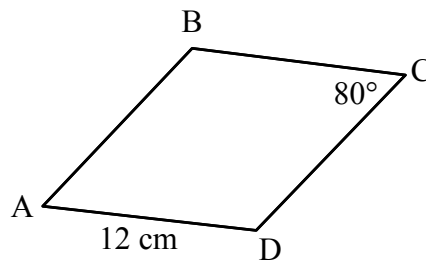


- a. 160° b. 15° c. 165° d. 85°

228. Determine the length of the radius in the circle below with diameter BC. Explain your reasoning.



229. Use the given measurements in the rhombus below to determine the length of AB and the measure of angle D. Explain your reasoning.



Math Performance Standard – Geometry A5.2.2

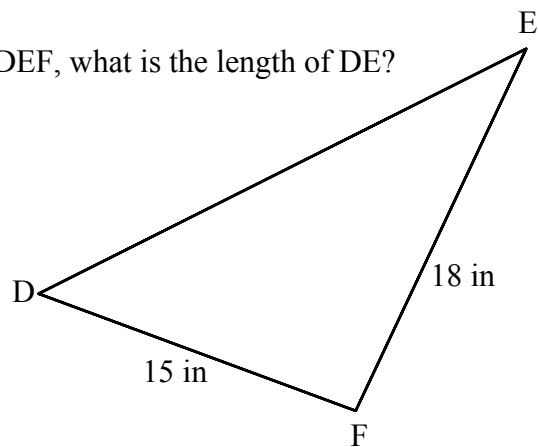
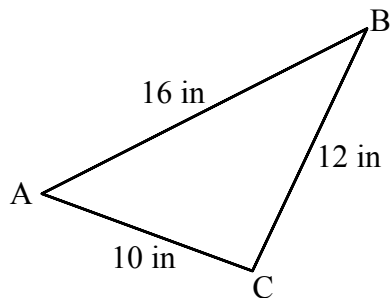
Comparing & Contrasting Figures

230. Compare and contrast a regular quadrilateral and a regular pentagon. Give a detailed response!
231. Compare and contrast a sphere and a circle. Give a detailed response!
232. Compare and contrast a square and a cube. Give a detailed response!
233. Compare and contrast a triangle and a triangular pyramid. Give a detailed response!
234. Describe the characteristics of a regular heptagon. Give a detailed response!
235. Describe a square pyramid. Use characteristics such as the number of edges and vertices as well as the number and types of faces it has.

Math Performance Standard – Geometry A5.3.3

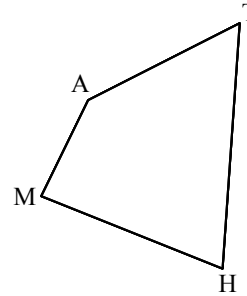
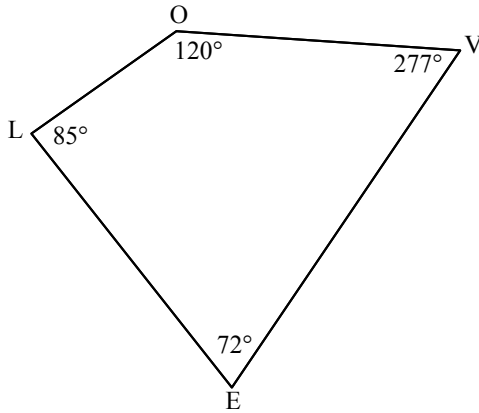
Applying Properties of Similar & Congruent Shapes

236. Given similar triangles ABC and DEF, what is the length of DE?



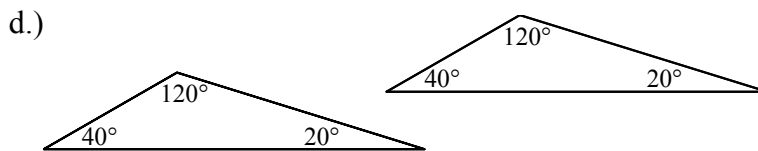
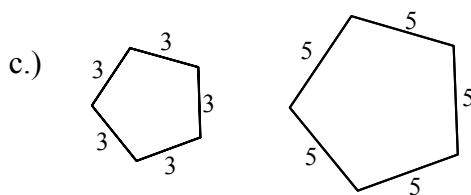
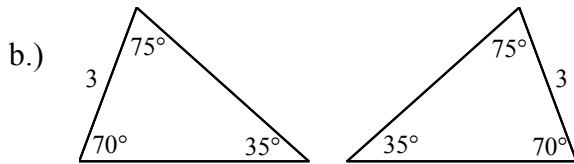
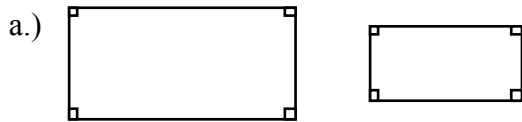
- a.) 16 in b.) 24 in c.) 22 in d.) 23 in

237. Quadrilaterals LOVE and MATH are similar. What is the measure of $\angle M$?

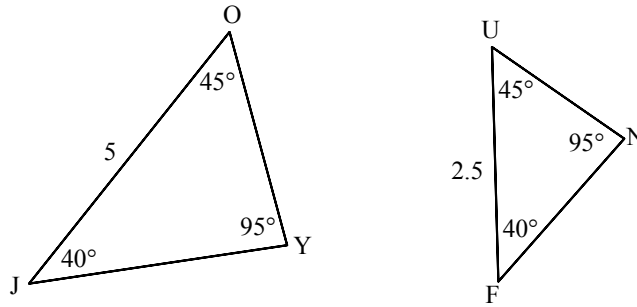


- a.) 85° b.) 120° c.) 72° d.) 105°

238. Identify the pair of congruent shapes.

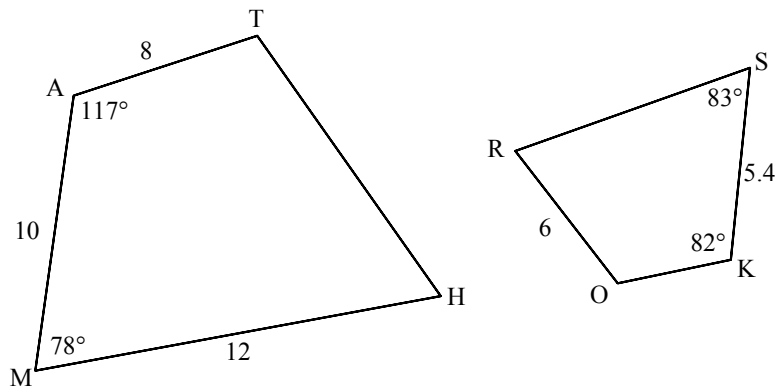


239. Identify the reason why triangles JOY and FUN are similar.

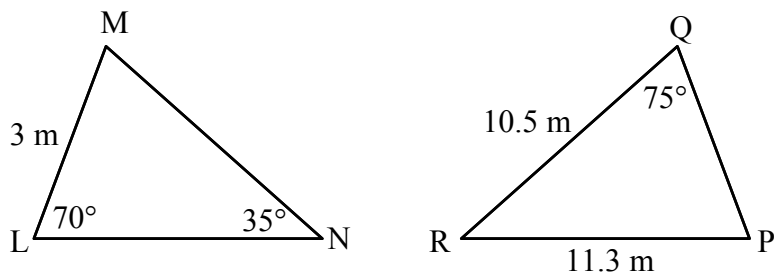


- a.) The angles of ΔJOY are congruent to the angles of ΔFUN .
- b.) ΔJOY and ΔFUN are the same shape and size.
- c.) They are both triangles.
- d.) The length of segment FU is half the length of segment JO

240. Quadrilaterals MATH and ROKS are similar. Determine the missing side and angle measures. Explain your reasoning.



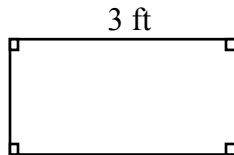
241. ΔLMN and ΔPQR are congruent. Determine the missing side and angle measures. Explain your reasoning.



Math Performance Standard – Geometry A5.3.4

Applying Perimeter, Area and Volume

242. Determine the area of a parallelogram with base 12 cm and height 14 cm.
- a.) 84 square cm b.) 52 square cm c.) 26 square cm d.) 168 square cm
243. Determine the volume of a sphere with radius length 9 cm.
- a.) $49\pi \text{ cm}^3$ b.) $972\pi \text{ cm}^3$ c.) $18\pi \text{ cm}^3$ d.) $12\pi \text{ cm}^3$
244. Given a circle with diameter length 9 cm, find the circumference and area of the circle. Show work!
245. The area of one face of a cube is 13 square feet. Determine the surface area of the cube. Show work!
246. The perimeter of the rectangle below is 14 feet. Determine the area. Show work!

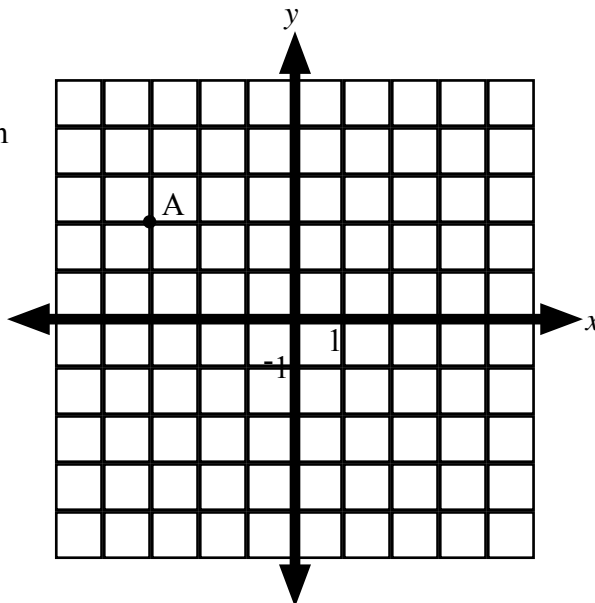


247. The radius of the base of a cylinder is 4 inches. The volume of the cylinder is 32π square inches. Determine the height of the cylinder. Show work!

Math Performance Standard – Geometry A5.2.6

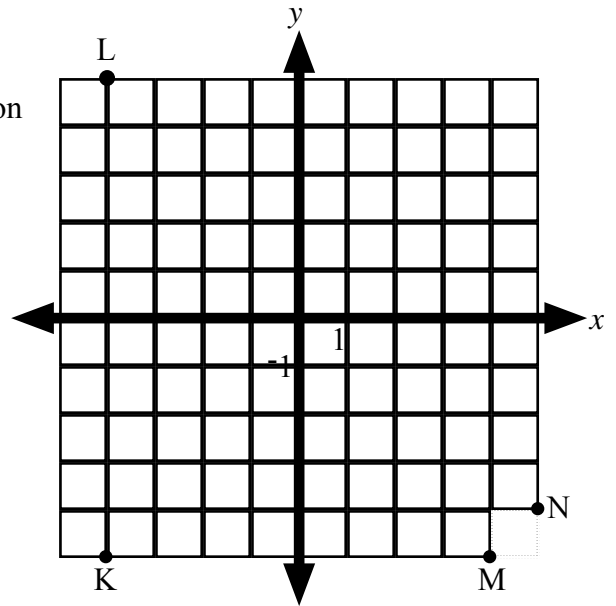
Describing Position & Direction

248. Identify the coordinates of A on the grid to the right.
- a.) (3, -2)
b.) (3, 2)
c.) (-3, 2)
d.) (-3, -2)



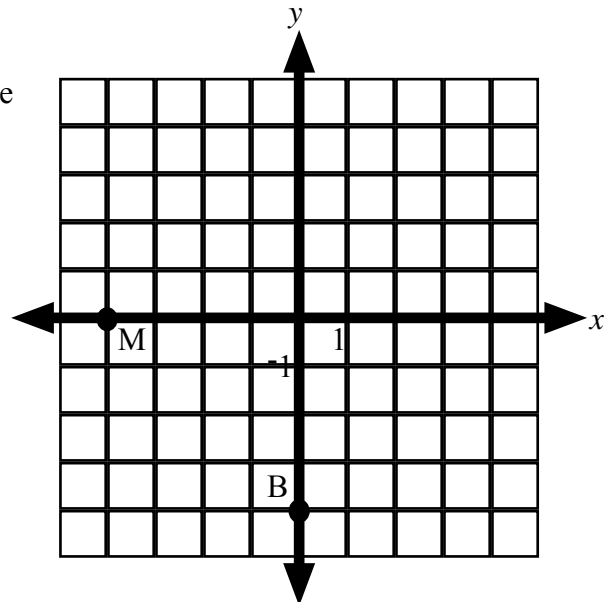
249. Which letter corresponds to the point $(4, -5)$ on the grid to the right.

- a.) K
- b.) L
- c.) M
- d.) N



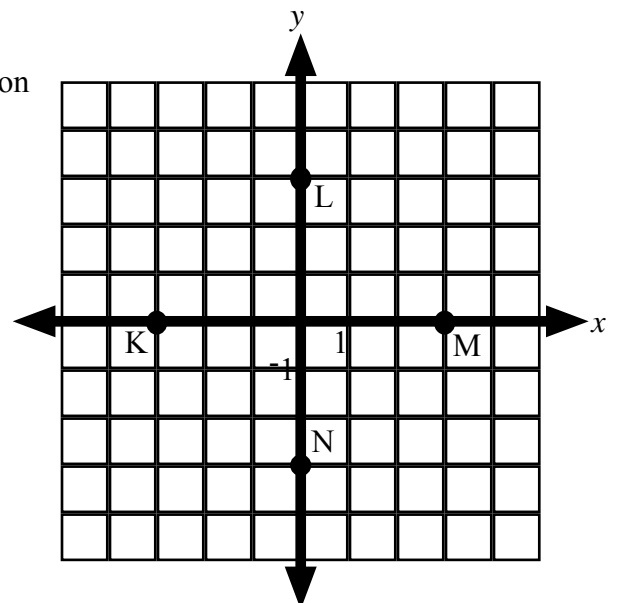
250. Identify the coordinates of B on the grid to the right.

- a.) $(0, -4)$
- b.) $(-4, 0)$
- c.) $(0, 4)$
- d.) $(4, 0)$

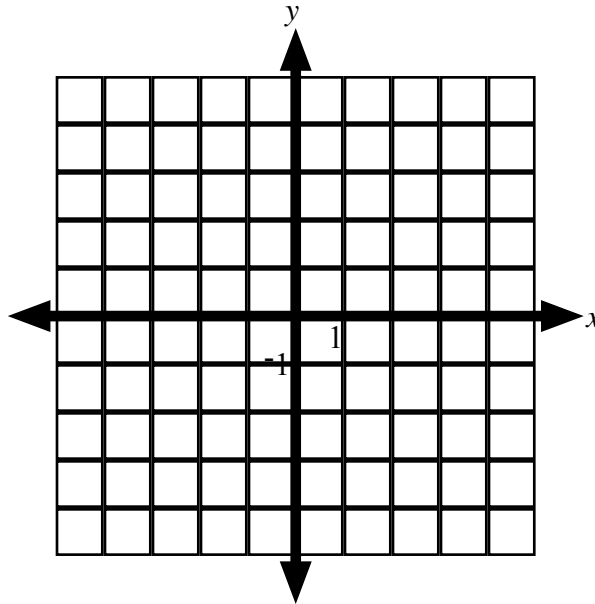


251. Which letter corresponds to the point $(-3, 0)$ on the grid to the right.

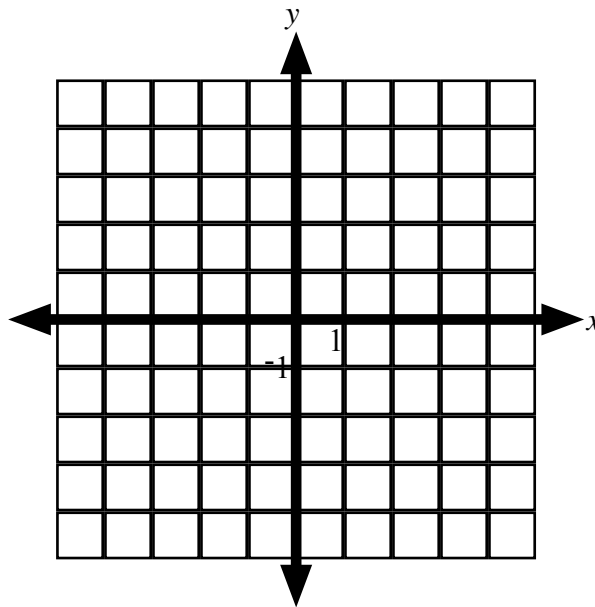
- a.) K
- b.) L
- c.) M
- d.) N



252. Plot the points $A(-3, 5)$, $B(4, 1)$, $C(-2, -4)$ and $D(1, -5)$ on the coordinate grid below.



253. Plot the points $K(-5, 0)$, $L(0, 1)$, $M(3, 0)$ and $N(0, -4)$ on the coordinate grid below.



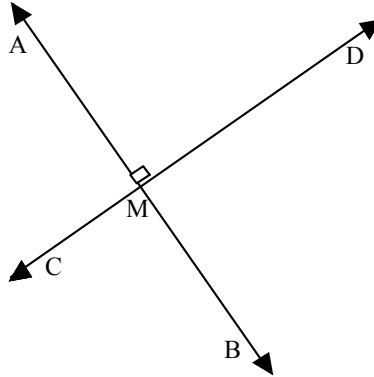
Math Performance Standard – Geometry A5.2.7

Drawing and Constructing Segments and Lines

254. Sketch line segment AB in the space below. Label its midpoint M .

255. Sketch line segment CD perpendicular to line EF.

256. In the picture below, what best describes the relationship between line AB and line CD.



- a.) They are parallel.
- b.) They are perpendicular
- c.) M is the midpoint of line AB
- d.) They are neither parallel nor perpendicular.

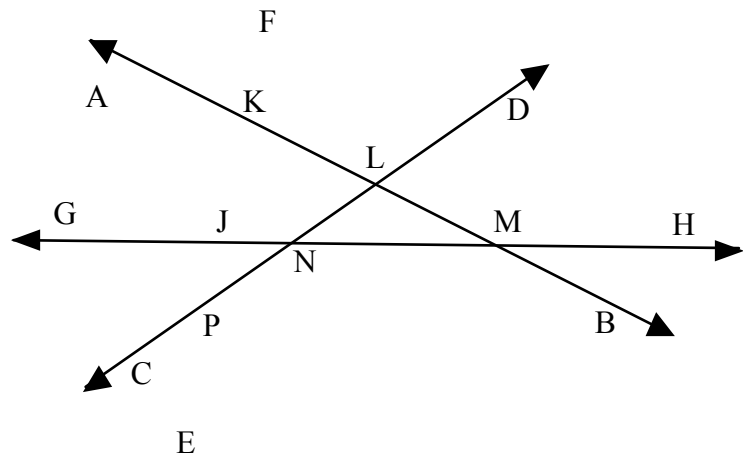
257. Measure the line segment below to the nearest half centimeter. Then locate and label the midpoint M of the segment.



258. Explain the difference between lines that are parallel and lines that are perpendicular. Use sketches in your response.

259. Use the diagram to the right to determine the point of intersection of line AB and line CD.

- a.) K
- b.) L
- c.) N
- d.) P



Math Performance Standard – Statistics and Probability A6.3.1

Analyzing & Displaying Data

260. A high school social studies class wanted to find out how many siblings the typical student had. They collected and analyzed the data for their class. Here's what they discovered:

Number of Siblings	Number of Students
0	4
1	6
2	7
3	3
4	2
5	0
6	1

Create a histogram to display the data. Label and scale both axes.

261. Given the circle graph to the right, approximately what percent of the people represented in the graph prefer chocolate icecream?

- a.) 50%
- b.) 40%
- c.) 55%
- d.) 65%



262. Fifty people were surveyed regarding their favorite color. The results of the survey are listed in the table below.

Color	Number of People
Blue	20
Yellow	5
Green	12
Red	10
Purple	3

Create a circle graph to display the data. Label each section.

263. Fifty people were surveyed regarding their favorite color. The results of the survey are listed in the table below.

Color	Number of People
Blue	20
Yellow	5
Green	12
Red	10
Purple	3

Suppose this distribution continued for two hundred people. Use your estimation skills to determine the number of people whose favorite color is green. Show your work!

264. The U.S. National Center for Health Statistics provided the following statistics regarding the number of cases of diabetes in the U.S.

Year	1983	1985	1987	1989	1991	1993	1995	1997	1999
Cases (in millions)	5.6	6.1	6.6	6.4	7.2	7.8	8.7	10	10.8

According to the data in the table, which statement is accurate?

- The smallest increase occurred between 1983 and 1985.
- A reasonable estimate for the number of cases in 2001 would be 8.2 million.
- The increase was consistent throughout the 16 years shown in the table.
- The greatest increase occurred between 1995 and 1997.

272. Joe is on his school's bowling team. Below is a list of his first five scores:

110, 150, 165, 130, 150

Find the mean, median and mode scores for the data listed above. Show your work.

Mean: _____

Median: _____

Mode: _____

Determine which measure of central tendency best describes Joe's bowling performance and justify your reasoning.

273. Joe is on his school's bowling team. Below is a list of his first five scores:

110, 150, 165, 130, 150

Describe how his mean score would be affected if his sixth score was 145.

274. Joe is on his school's bowling team. Below is a list of his first five scores:

110, 150, 165, 130, 150

Describe how his median score would be affected if his sixth score was 145.

275. Joe is on his school's bowling team. Below is a list of his first five scores:

110, 150, 165, 130, 150

Describe how the mode score would be affected if his sixth score was 145.

276. Mary analyzed the set of temperatures in December for a one-week period:

32°, 40°, 36°, 27°, 32°, 17°, 12°

Which of the following interpretations of the data set is not accurate?

- a.) The median is equal to the mode.
- b.) The mean is 28°.
- c.) The median temperature is lower than the mean temperature.
- d.) The greatest temperature in this one-week period was 40°.

277. Fifty people were surveyed regarding their favorite color. The results of the survey are listed in the table below.

Color	Number of People
Blue	20
Yellow	5
Green	12
Red	10
Purple	3

Which of the following interpretations is accurate?

- a.) More people surveyed prefer green to any other color.
- b.) The least amount of people prefer the color yellow.
- c.) Twice as many people prefer red to blue.
- d.) One fourth as many people prefer yellow to blue.

Math Performance Standard – Statistics and Probability A6.3.4

Making Projections Based on Data

278. The U.S. National Center for Health Statistics provided the following statistics regarding the number of cases of diabetes in the U.S.

Year	1983	1985	1987	1989	1991	1993	1995	1997	1999
Cases (in millions)	5.6	6.1	6.6	6.4	7.2	7.8	8.7	10	10.8

- According to the data in the table, which of the following projections is most reasonable?
- a.) A reasonable estimate for the number of cases in 2001 is 12.8 million.
b.) A reasonable estimate for the number of cases in 2001 is 8.2 million.
c.) A reasonable estimate for the number of cases in 1981 is 6.7 million.
d.) A reasonable estimate for the number of cases in 1998 is 11.2 million.
279. The stem-and-leaf plot below represents the numbers of portable CD-players sold per week at an electronics store during a 10-week period.

```
3 | 1
2 | 0 2 8 9
1 | 3 6 6
0 | 5 8
```

1 | 3 indicates 13 portable CD-players sold during a week

Assuming that the data in the stem-and-leaf plot is representative of the next 10-week period, which of the following projections is the least accurate?

- a.) There will be two weeks in which the store sells under ten players.
b.) There will be at least one week in which the store sells over thirty players.
c.) There will be at least one week in which the store sells over forty players.
d.) During any given week, the store will most likely sell more than ten players.

Math Performance Standard – Statistics and Probability A6.1.5/6.2.6

Simple Probability

280. You are flipping two quarters. What is the number of outcomes for this event?
a.) 1 b.) 2 c.) 3 d.) 4
281. You are flipping three quarters. What is the number of outcomes for this event?
a.) 2 b.) 4 c.) 8 d.) 16
282. You are flipping two quarters. What is the number of occurrences of flipping either all tails or all heads?
a.) 0 b.) 1 c.) 2 d.) 4
283. You are flipping three quarters. What is the number of occurrences of flipping exactly two coins the same (exactly two heads or exactly two tails)?
a.) 2 b.) 6 c.) 7 d.) 8
284. You are flipping three quarters. What is the probability that you will get heads on all three coins?
a.) $1/4$ b.) $1/8$ c.) $1/16$ d.) $1/2$
285. You are flipping three quarters. What is the probability that you will get tails on two of them and a head on the other?
a.) $3/8$ b.) $1/8$ c.) $1/2$ d.) $1/4$
286. You are flipping three quarters. What is the probability that you will get at least two tails?
a.) $3/8$ b.) $1/8$ c.) $1/2$ d.) $1/4$
287. You roll a pair of standard six-sided dice. What is the probability you will roll an even sum?
a.) $18/36$ b.) $9/36$ c.) $1/4$ d.) $1/2$

288. You roll a pair of standard six-sided dice. What is the probability you will roll an odd product?

a.) $\frac{3}{4}$

b.) $\frac{1}{2}$

c.) $\frac{1}{6}$

d.) $\frac{1}{4}$

289. What is the probability of rolling a sum of six with a pair of standard six-sided dice? Show your work.

290. Two numbers are chosen at random from the list below.

1, 2, 3, 5, 6, 7, 8, 9

What is the probability that the two numbers will have a product of six? Show your work.

291. A card is chosen at random from a standard deck of 52 playing cards. What is the probability of choosing a face card (jack, queen, king)? Show your work.