1. The table below shows the number of students in each grade at Madison Junior High who are enrolled in various musical groups.

Madison Junior High Musical Groups

Musical Group	7th Grade	8th Grade	9th Grade
Jazz choir	12	12	10
Concert choir	32	46	20
Orchestra	16	20	24
Marching band	60	62	86

Which graph best represents the data in the table?

(a)

Madison Junior High Musical Groups

(b)

Madison Junior High Musical Groups

(c)

Madison Junior High Musical Groups

(d)

Madison Junior High Musical Groups
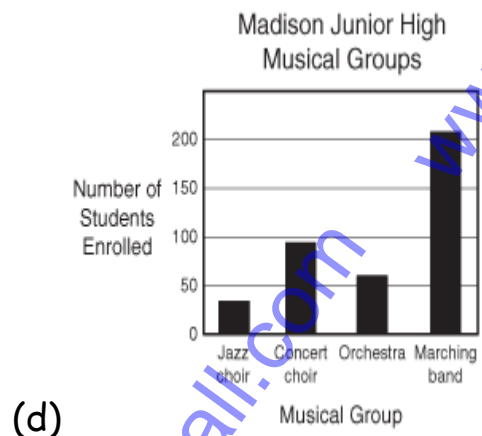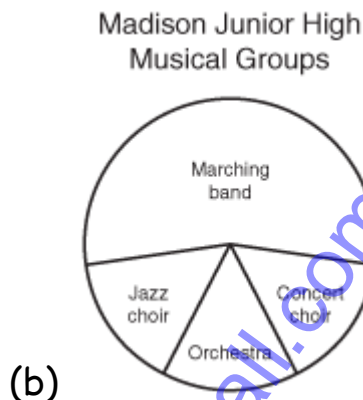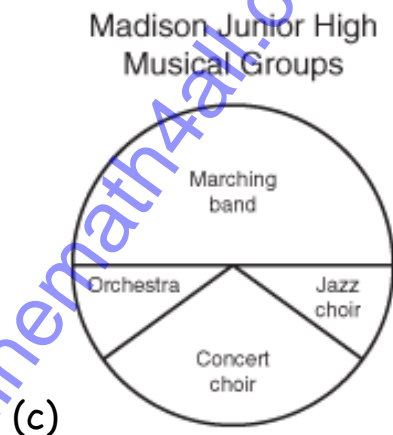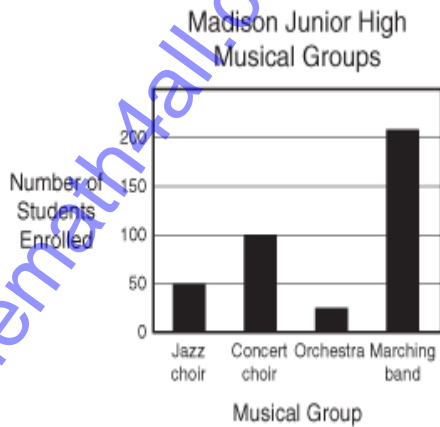
2. Deb has a rectangular storage box with a height of 18 inches, as shown below.
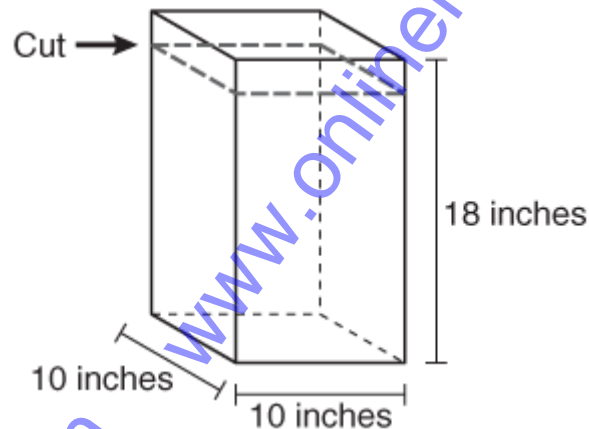
If Deb cuts off a 2-inch strip around the top of the box, what will be the new volume of the box in cubic inches?

(a) 1,600 in.^{3} (c) 1,024 in.^{3}

(b) 1,440 in.^{3} (d) 1,800 in.^{3}

3. The students in Mr. Lee's science class are ordering the materials they will need for a science experiment. Each student will need a bag of plant seeds that costs $1.00 and a 6-plant tray that costs $2.50. If x represents the number of students in Mr. Lee's science class, which equation can be used to find y, the amount in dollars spent by Mr. Lee's students?

(a) $y = 2.5x + 1$ (c) $y = x + 3.5$

(b) $y = 3.5x$ (d) $y = x + 2.5$

4. The table shows the population of Texas from 1900 to 2000.

Texas Population

Year	Population (thousands)
1900	3,049
1910	3,897
1920	4,663
1930	5,825
1940	6,415
1950	7,711
1960	9,580
1970	11,197
1980	14,229
1990	16,987
2000	20,852

Which of the following is true, based on the data above?

(a) The population of Texas doubled from 1980 to 2000.

(b) The population of Texas in 1990 was 4 times the population in 1920.

(c) The population of Texas more than tripled from 1900 to 1960.

(d) The population of Texas in 1980 was 2 times the population in 1950.

5. Mrs. Weathers bee drew a line and shaded part of the coordinate plane.
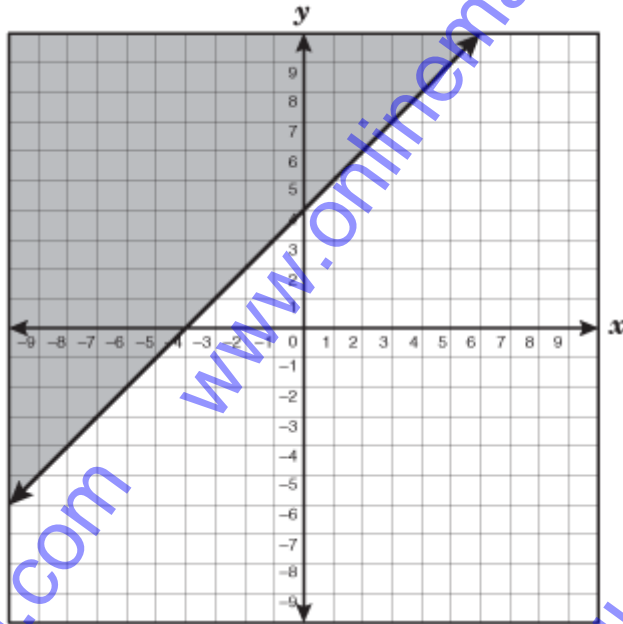
Which list is made up of coordinate pairs representing points in the shaded part of the coordinate plane?

(a) (3, –4), (–2, 5), and (6, –3)

(b) (–3, 4), (3, 8), and (–9, –2)

(c) (–6, 3), (1, 6), and (–2, 1)

(d) (–3, 5), (3, 1),and (–9, 2)

6. Zeb used the rule listed below to rewrite the expression $10^2 \times 10^5$.

$$10^m \times 10^n = 10^{m+n}$$

Based on this rule, which of these is equivalent to the expression $8^{-4} \times 8^6$?
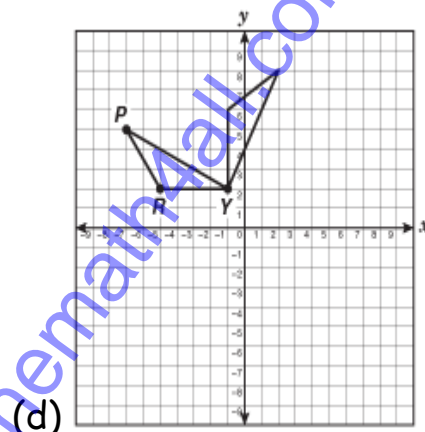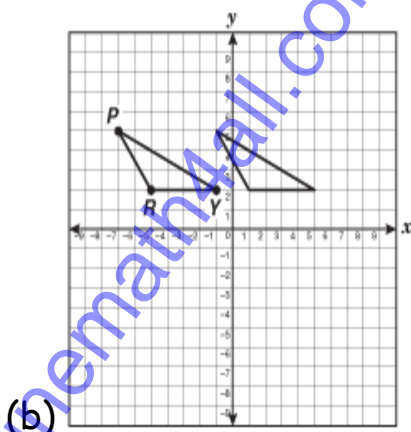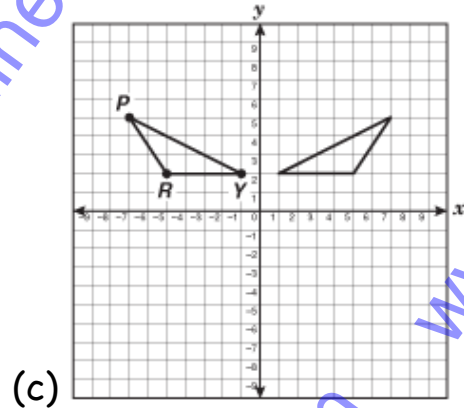
(a) 8^{-10}, because $8^{-4} \times 8^6 = 8^{-4-6}$

(b) 8^{10}, because $8^{-4} \times 8^6 = 8^{4+6}$

(c) 8^{-2}, because $8^{-4} \times 8^6 = 8^{4-6}$

(d) 8^2, because $8^{-4} \times 8^6 = 8^{-4+6}$

7. △*PRY* is reflected across the *y*-axis. Which of the following shows this transformation?

(a)

(b)

(c)

(d)
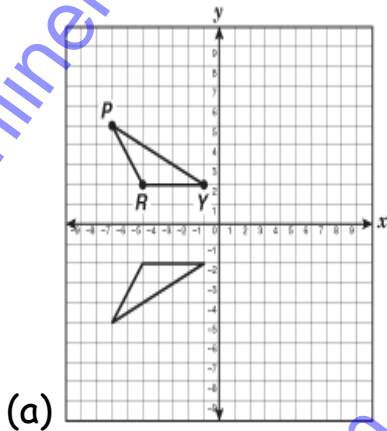
8. A set of parentheses is missing from the expression below.

$$15 - 5 + 7 \cdot 2 + 4$$

Which of the following expressions has the parentheses in the correct place for the expression to equal 52?

(a) $15 - (5 + 7 \cdot 2) + 4$

(b) $(15 - 5 + 7) \cdot 2 + 4$

(c) $15 - (5 + 7 \cdot 2 + 4)$

(d) $15 - 5 + 7 \cdot (2 + 4)$

9. The table shows n, the number of sides of a polygon, and S, the sum of the measures of the interior angles of that polygon.

Polygon

Number of Sides, n	Sum of Interior Angle Measures, S
3	180°
4	360°
5	540°
6	720°
7	900°

Based on the table, which statement is true?

(a) The sum of the interior angle measures decreases by $\frac{1}{2}$ for each side increase of 1.

(b) The sum of the interior angle measures increases by 180° for each side increase of 1.

(c) The sum of the interior angle measures doubles for each side increase of 1.

(d) The sum of the interior angle measures is a whole-number multiple of 360°.

10. Look at the sequence in the table below.

Position	Value of Term
1	0.5
2	0.75
3	1.0
4	1.25
5	1.5
n	

Which expression can be used to find the value of the term in the nth position?

(a) n/2

(c) (n+1)/4

(b) 3n/2

(d) 3n/4

11. A recipe for 12 waffles calls for 3/2 cups of milk, 9/4 cups of flour, and 4/3 cups of other ingredients. How many cups of milk, flour, and other ingredients are needed to make 36 waffles?

(a) 61/3 cups

(c) 49/4 cups

(b) 60/4 cups

(d) 61/12 cups

12. Raymond packs boxes for an appliance company. He can pack a large box in 10 minutes and a small box in 4 minutes. He needs to pack 10 large boxes and 20 small boxes. If 2.5 hours remain before closing time, will Raymond have time to finish the work before closing time if he works without stopping?

(a) Yes, Raymond will finish the work in 1.8 hours.

(b) No, it will take him 4 hours to finish.

(c) Yes, Raymond will finish the work in 0.5 hour.

(d) No, it will take him 3 hours to finish.

13. Mr. Loya stated that the circumference of Earth at the equator is 24,902.4 miles. Which expression represents this number in scientific notation?

(a) 2.49024×10^4

(c) 249.024×10^4

(b) 24.9024×10^4

(d) 2.49024×10^5

14. Mrs. Guzman bought 3 table lamps for $129.90. If each lamp cost $40.00 before tax was added, what tax rate did she pay on the 3 lamps?

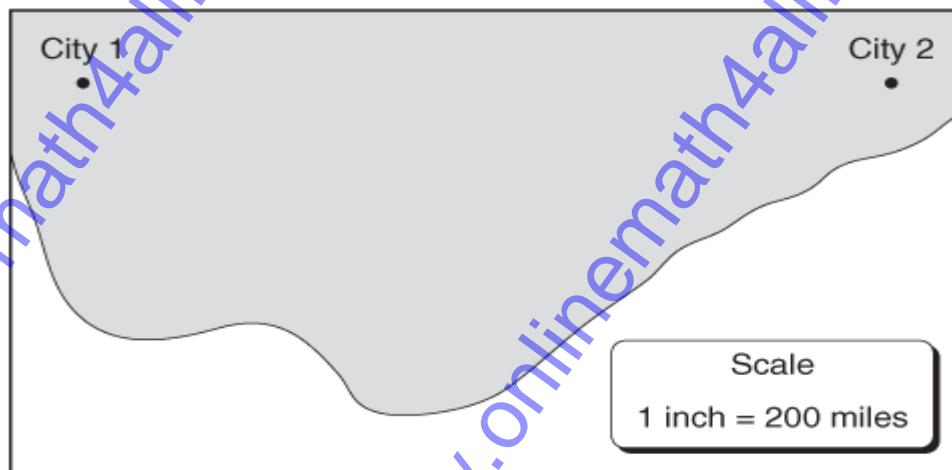(a) 7.5%   (c) 30.79%

(b) 43.3%   (d) 8.25%

15. Ivan's car uses gasoline at an average rate of 20 miles per gallon. He must drive from City 1 to City 2. Use the ruler on the Mathematics Chart to measure the distance from City 1 to City 2 on the map below in inches.

City 1   City 2

Scale
1 inch = 200 miles

How many gallons of gasoline will Ivan's car use at this rate when he drives from City 1 to City 2?

(a) 10 gal   (c) 200 gal

(b) 40 gal   (d) 8gal

16. A water tank contains 2,500 gallons. A faucet attached to the tank releases water at a constant rate of 5 gallons per minute. If the faucet is left open for 1 hour and no other water is released, which equation can be used to find r, the number of gallons of water remaining in the tank?
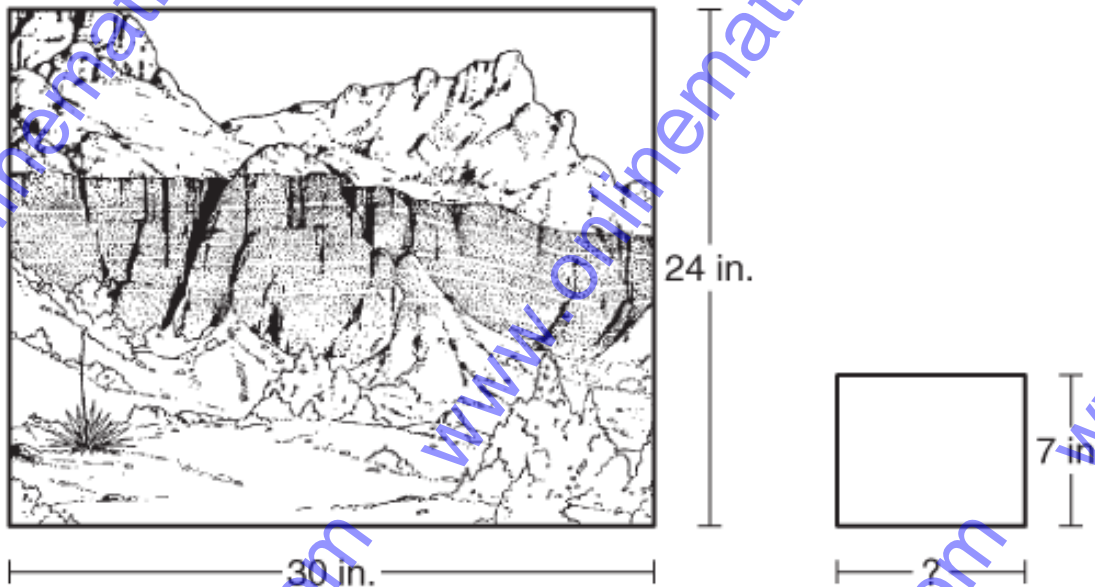
(a) $r = 2{,}500 \div 5$

(b) $r = 2{,}500 - 60$

(c) $r = 2{,}500 - 60(5)$

(d) $r = 2{,}500 \div 60(5)$

17. The picture below is Larry's favorite picture.

24 in.

7 in.

30 in.

?

Larry had a reduced copy of the picture made as a gift for his father. If the reduced picture was similar to the original and the height of the reduced picture was 7 inches, what was its width?

(a) 13 in

(c) 8.75 in.

(b) 5.60 in.

(d) 10 in.

18. The area of a square is 83 square meters. Which of these is closest to the length of each side of the square?
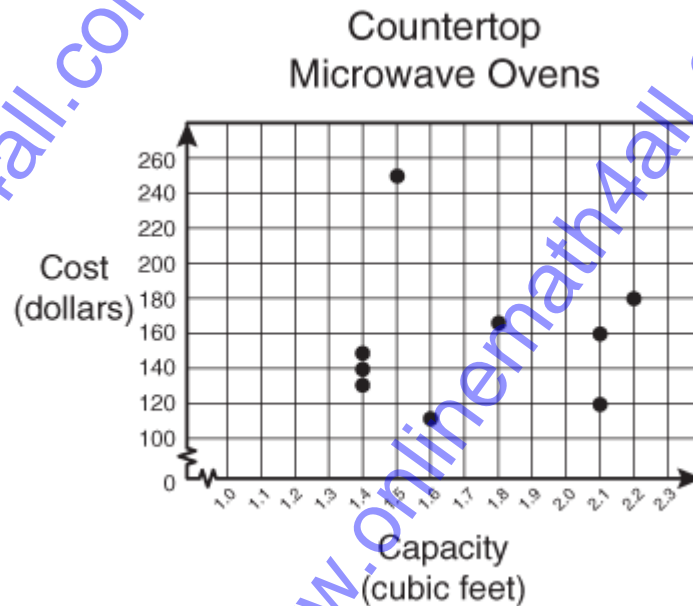
(a) 9.1 m   (c) 8.9 m

(b) 9 m   (d) 8 m

19. The scatter plot below shows the cost of 9 large countertop microwave ovens and their capacity in cubic feet

Countertop
Microwave Ovens

Which best describes the trend shown in the scatter plot?

(a) Positive trend   (c) Mean trend

(b) Negative trend   (d) No trend

20. Sean is planning a trip of 1,450 miles. He plans to drive between 250 and 300 miles each day. At this rate, which is a reasonable number of days it will take Sean to complete his trip?

(a) Less than 4 days

(c) Between 6 and 8 days

(b) Between 4 and 6 days

(d) More than 8 days

21. A fast train, known as a bullet train, travels at an average speed of 163 miles per hour. The equation below shows the relationship between d, the number of miles the train travels, and t, the number of hours it travels.

$$d = 163t$$

What is the distance in miles the train will travel in 3/2 hours?

(a) 244.5

(c) 220.42

(b) 200.40

(d) 256.3

22. Moffett's Candy Factory makes candy in the shape of cylinders. The net of a cylindrical piece of candy is shown below.
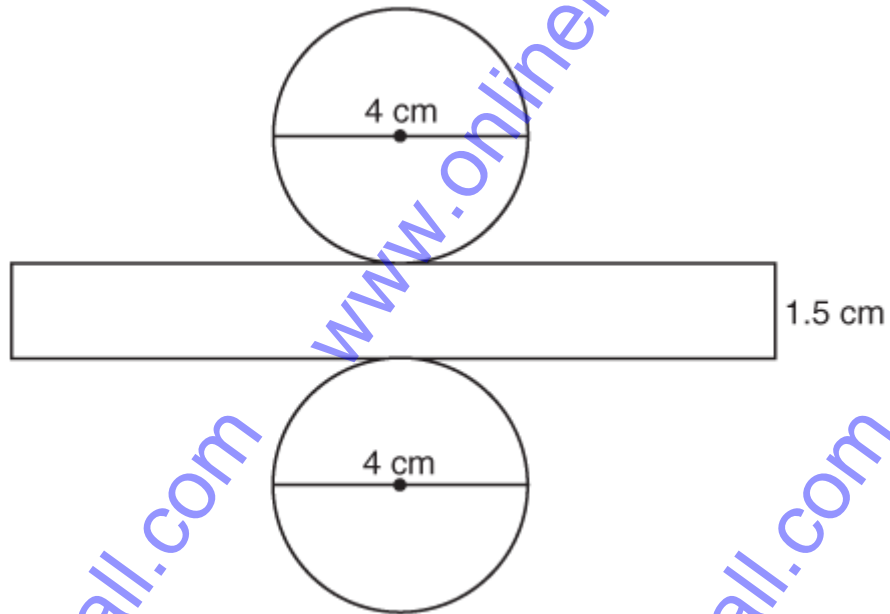
Which is closest to the total surface area of this piece of candy?

(a) 31 cm ^{2} (c) 44 cm ^{2}

(b) 19 cm ^{2} (d) 75 cm ^{2}

23. Julie is going to conduct a school survey for a research paper. Which sampling method is NOT a good representation of her school's student population?

(a) Survey every fifth student as all students exit the main door at school

(b) Survey all students at a shopping mall

(c) Survey $\frac{1}{4}$ of all the students at school randomly

(d) Survey all the students whose names have been randomly drawn by the school's computer

24. Let n represent the position of a term in the sequence below.

$$8, \ 11, \ 14, \ 17, \ 20, \ 23, \ldots$$

Which algebraic expression can be used to find the nth term of the sequence?

(a) $2n + 6$ (c) $5n + 3$

(b) $6n + 2$ (d) $3n + 5$

25. Nikki paid Dalton $15.50 for a combination of 15 baseball and football cards. The baseball cards were $1.50 each, and the football cards were $0.50 each. How much did Nikki spend on the baseball cards?

(a) $3.50

(c) $4.00

(b) $12.00

(d) $10.50

26. A rancher sold 100 calves. He recorded the following data about these animals.

Calves

Measure of Data	Weight (pounds)
Range	250
Median	475
Mean	505
Mode	480

Which measure of data could be used to calculate the total weight of the calves sold?

(a) Mean

(c) Mode

(b) Median

(d) Range

27. The Texas state flag is rectangular and has a width-to-length ratio of 2:3. Which of the following can be used to find l, the length of a Texas state flag with a width of 28 inches?

(a) $2 + 28 = 3 + l$

(b) $\dfrac{2}{28} = \dfrac{l}{3}$

(c) $\dfrac{2}{3} = \dfrac{28}{l}$

(d) $2 \cdot 28 = 3 \cdot l$

28. Mai earns a salary of $200 per week plus an additional 5% commission on her sales. If Mai's weekly salary increases by $25 and her commission increases to 6%, how much will she earn if her weekly sales are $2,500?

a) $325.00

(b) $375.00

(c) $525.00

(d) $700.00

29. The Sundown Parking Garage charges $5.00 to park a car for the first hour and $0.75 for each additional hour or part of an hour after the first hour. What is the total charge for parking a car for 4 hours 42 minutes in this garage?
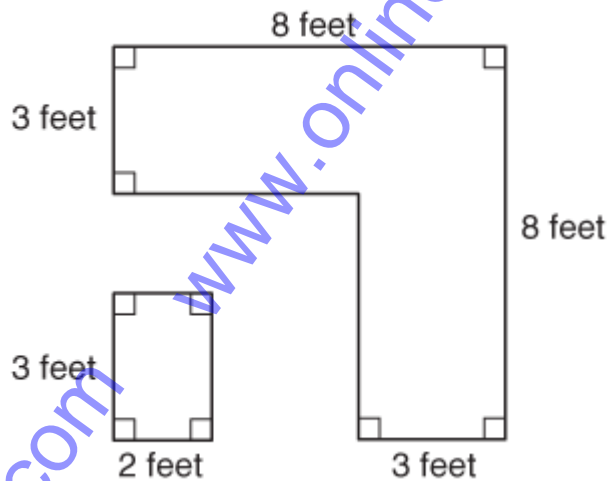
(a) $5.75

(b) $6.50

(c) $7.25

(d) $8.00

30. Mr. Jones wants to install new countertops on his 2 kitchen counters. The drawing below shows the dimensions of the counters.

What is the least amount of material needed to cover the tops of both kitchen counters?

(a) 54 ft^2 (c) 39 ft^2

(b) 45 ft^2 (d) 6 ft^2

31. Several stores are having sales. The prices are reduced by 62.5%, $\frac{2}{3}$, 75%, $\frac{1}{2}$, and $\frac{7}{10}$. Which list shows the price reductions from greatest to least?

(a) 75%, 62.5%, $\frac{1}{2}$, $\frac{2}{3}$, $\frac{7}{10}$

(b) 75%, $\frac{7}{10}$, $\frac{2}{3}$, 62.5%, $\frac{1}{2}$

(c) 75%, $\frac{7}{10}$, 62.5%, $\frac{1}{2}$, $\frac{2}{3}$

(d) 75%, $\frac{7}{10}$, 62.5%, $\frac{2}{3}$, $\frac{1}{2}$

32. The table below shows a relationship between x and y.

x	y
0	3
1	8
3	18
4	23
6	33

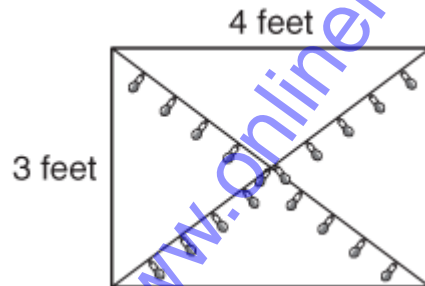Which equation best represents this relationship?

(a) $y = x + 3$

(b) $y = 3x$

(c) $y = 5x - 3$

(d) $y = 5x + 3$

33. Mrs. Gonzáles wants to string lights along both diagonals of a rectangular window, as shown below.

What is the minimum length of lights Mrs. Gonzáles will need?

(a) 5 ft

c) 10 ft

(b) 7 ft

(d) 14 ft

34. On Monday Mandy bought a CD for 40% off the regular price of $16.00, not including tax. The next day the CD that Mandy had bought was marked down to 65% off its regular price. How much more money would Mandy have saved, not including tax, if she had waited until Tuesday to buy the CD?

(a) $4.00

(c) $9.60

(b) $6.40

(d) $10.40

35. Which ordered pair is located in Quadrant IV?

(a) (-2.5, 4.5)   (c) (-1.65, -1.55)

(b) (0,-5)   (d) (2,-2)

---

36. Mrs. Micelli placed a picture of an equilateral triangle on an overhead projector in her math class. The overhead projector dilated the triangle's image on the screen by a scale factor of 3.5. If the length of each side of the actual triangle is 5 centimeters, what is the length of each side of the dilated triangle on the screen?

(a) 175 cm   (c) 8.5 cm

(b) 17.5 cm   (d) 3 cm

---

37. Fiona has a bag containing 6 red, 8 blue, 5 green, 9 yellow, and 2 white marbles that are all the same size and shape. What is the probability of randomly choosing a white marble on the first pick, replacing it, and then randomly choosing a green marble on the second pick?

(a) 1/6   (c) 1/87

(b) 1/15   (d) 1/90

38. The table shows the relationship between the weight of a package and the cost of mailing it.

Mailing a Package

Weight (ounces)	Cost
1 or less	$0.37
2	$0.60
3	$0.83
4	$1.06
8	$1.98

Based on the pattern in the table, what will it cost to mail a 13-ounce package?

(a) $3.04

(c) $3.13

(b) $2.99

(d) $4.81

39. This Venn diagram is used to classify counting numbers according to a set of rules.

Which one of the following numbers belongs in the region of the diagram marked by the question mark?

(a) 45   (c) 60

(b) 50   (d) 65

40. Which equation can be used to find m, the number of minutes in h hours?

(a) $m = 60 - h$ (c) $m = h \div 60$

(b) $m = h + 60$ (d) $m = 60h$

41. Sharon played an electronic game. There were 15 questions, of which she answered 3 incorrectly. At this rate, how many questions should Sharon expect to answer incorrectly if she answers a total of 135 questions?

(a) 45

(c) 9

(b) 27

(d) 5

42. Mrs. Diaz told her math class that a particular rectangle has a perimeter of 36 units and an area of 65 square units. Which of the following could be the dimensions of the rectangle?

(a) 2.5 units by 26 units

(c) 5 units by 13 units

(b) 4 units by 9 units

(d) 6.5 units by 11.5 units

43. Anthony helps his father with his lawn-mowing service. His father charges from $25.00 to $50.00 per lawn depending on the size of the lawn to be mowed. Last Saturday, Anthony and his father spent 13/2 hours mowing 3 lawns. If Anthony's father actually charged $25.00 for the smallest lawn and $50.00 for the largest lawn, about how much could Anthony's father have charged for all 3 lawns?
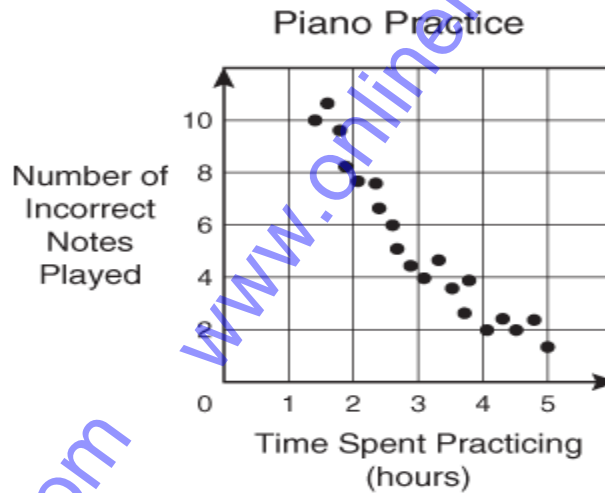
(a) $75

(c) $110

(b) $95

(d) $150

44. The scatter plot below shows the amount of time a piano student spends practicing a song and the number of incorrect notes he plays while performing that song.

Piano Practice

Number of Incorrect Notes Played

Time Spent Practicing (hours)

Which statement best describes the relationship shown in the scatter plot?

(a) As the time spent practicing increases, the number of incorrect notes played remains constant.

(b) The greater the time spent practicing, the fewer the number of incorrect notes played.

(c) There is no relationship between the time spent practicing and the number of incorrect notes played.

(d) The greater the time spent practicing, the greater the number of incorrect notes played.

45. A ladder that is 13 feet long leans against a building. The bottom of the ladder is 5 feet away from the base of the building. How far up the side of the building does the ladder reach?
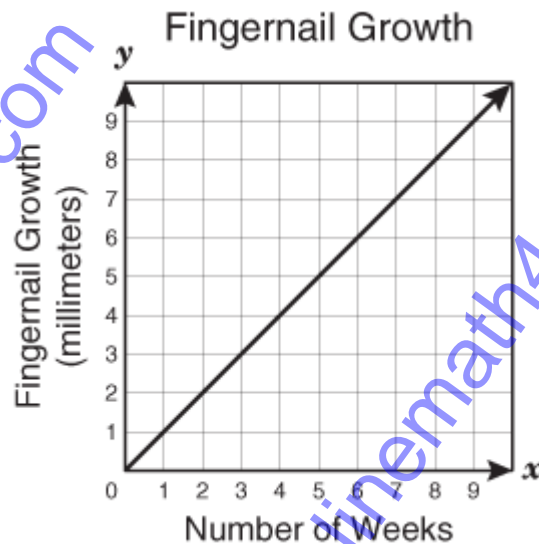
(a) 18 ft

(c) 12 ft

(b) 16 ft

(d) 8 ft

46. The graph below shows the growth rate of a human fingernail.

Fingernail Growth

Based on the information in the graph, which best represents the number of millimeters a fingernail grows in 25 days?

(a) 3.1 mm

(c) 4.1 mm

(b) 3.6 mm

(d) 4.6 mm

47. To cover his bulletin board, Mr. Adams needs 3/2 yards of fabric and 25/4 yards of trim. If the fabric costs $2.79 per yard and the trim costs $1.19 per yard, which equation can be used to find c, the total cost of covering the bulletin board?

(a) $c = (2.79 + 1.5) + (1.19 + 6.25)$

(b) $c = (2.79 \cdot 1.5) + (1.19 \cdot 6.25)$

(c) $c = (2.79 + 1.5) - (1.19 + 6.25)$

(d) $c = (2.79 \cdot 1.5) - (1.19 \cdot 6.25)$

48. Mr. and Mrs. Lee brought their 2 children, Cooper and Erin, to a museum. Only Mr. Lee received a discount on his ticket. The table below shows the admission prices at the museum.

Museum Admission

Adults $7.00

Children
ages 5–12 . . . . $5.00

Children
under age 5 . . . . $3.00

Which person's admission price can be found without any other information?
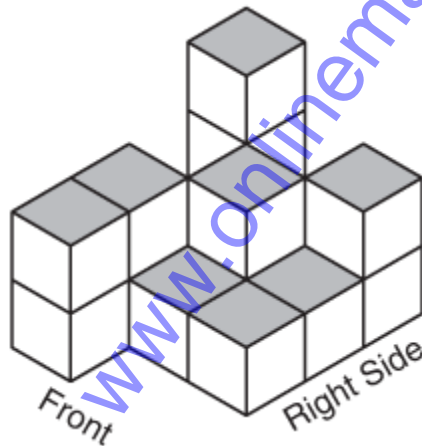
(a) Mrs. Lee   (c) Cooper

(b) Mr. Lee   (d) Erin

49. A store sells potatoes in 5-pound bags for $2.29. Which of the following bags of potatoes would be the same price per pound?
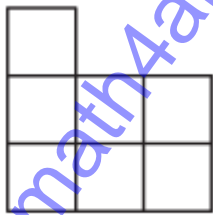
(a) A 20-pound bag for $8.80   (c) A 10-pound bag for $4.58

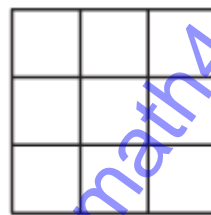(b) A 2-pound bag for $1.02   (d) A 7-pound bag for $3.01

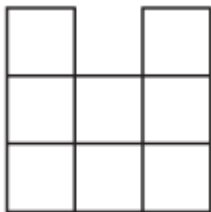50. Melody made a solid figure by stacking cubes. The solid figure is shown below.

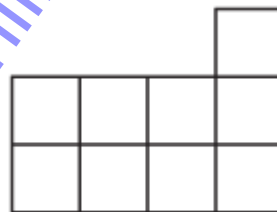Which drawing best represents a front view of this solid figure?

(a) Front

(c) Front

(b) Front

(d) Front

Answers:

1. d	2. a	3. b	4. c	5. b	6. d
7. c	8. d	9. b	10. c	11. b	12.d
13.a	14. d	15. b	16. c	17. c	18. a
19. d	20. b	21. a	22. c	23. b	24. d
25. b	26. a	27. c	28. b	29.d	30. b
31. b	32. d	33. c	34. a	35. d	36. b
37. d	38. c	39.c	40. d	41. b	42. c
43. c	44. b	45. c	46.b	47. b	48. a
49. c	50. a				