1. Danny wants to buy a new car. The salesperson showed him the list of options below that are available for the model of car he is interested in buying.

LIST OF NEW CAR OPTIONS

Interior	Rim Style	Color
• Cloth	• Standard	• Canary Yellow
• Leather	• Aluminum	• Cranberry Red
	• Chrome	• Forest Green
		• Jet Black
		• Midnight Blue
		• Pearl White

How many combinations of 1 interior, 1 rim style, and 1 color are there for Danny to choose from if he uses this list of options?

(a) 3

(b) 11

(c) 18

(d) 36

2. Jason earned a quiz score of 25 out of 40 points. What percent is equivalent to 25 out of 40%?

(a) 1.6%

(b) 6.25%

(c) 16%

(d) 62.5%

3. How many spokes are there in the wheel of a sports car if any two spokes form an angle of 15°?

(a) 12

(b) 15

(c) 22

(d) 24

4. Two clocks are set at the same time, one is seen to gain 40 seconds and other to lose 50 seconds in 24 hours. In how much time will they show a difference of 15 minutes?

(a) 90 days

(b) 10 days

(c) 90 hours

(d) 10 hours

5. A girl was given two candles by her father for her birthday and was told that one candle would burn for six hours and the other, four hours. After they were both lit and allowed to burn for sometime, the girl noticed that one candle was twice as long as the other. State for how long the candles had been burning together?

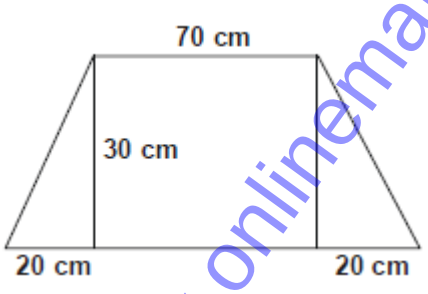
(a) 2 hours

(c) 4hours

(b) 3hours

(d) 5hours

6. Two carpenters decided to design desks for students at the Junior High School. The dimensions of the desk are as shown. How much wood (in cm^2) would they need for 30 desks?



(a) 2700 cm^2

(c) 21000 cm^2

(b) 80000 cm^2

(d) 81000 cm^2

7. A rectangular kitchen table is three times as long as it is wide. If it was 3 m shorter and 3 m wider it would be a square. What are the dimensions of the rectangular table?

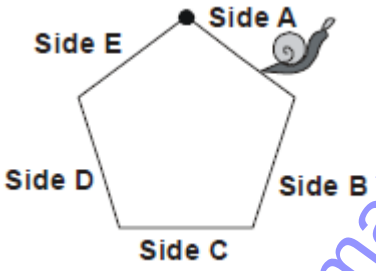
(a) 9 × 3

(b) 4 x 2

(c) 12 x 6

(d) 16 x 4

8. One snail started from the dot. What side will it be on when it has crawled 13/20 of the distance around the regular pentagon of equal sides?



(a) A

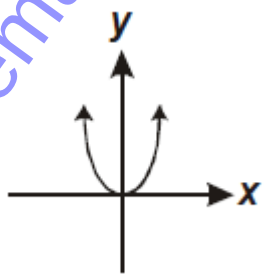
(b) C

(c) D

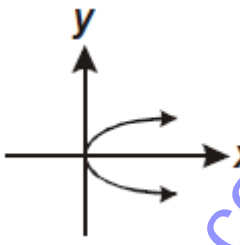
(d) E

9. Which graph shows $y = -x^2$?

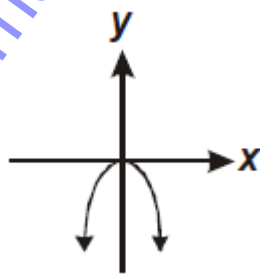
(a)



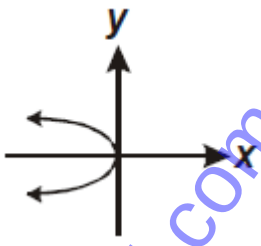
(b)



(c)



(d)



10. What is value of x?

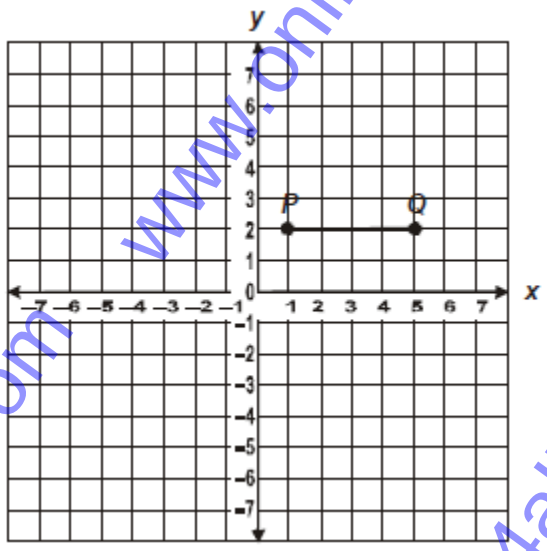
(a) 35^0

(b) 60^0

(c) 85^0

(d) 95^0

11. Look at the given coordinate grid. Points R and S will be added to the grid to form rectangle *PQRS* with an area of 20 square units. Which ordered pairs could be the coordinates of points *R* and *S*?



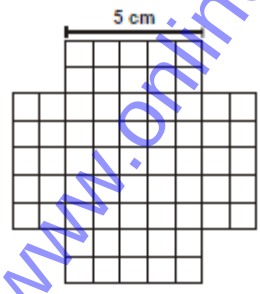
(a) (5, –1) and (1, –1)

(b) (5, –2) and (1, –2)

(c) (5, –3) and (1, –3)

(d) (5, –4) and (1, –4)

12. The four sides of this figure will be folded up and taped to make an open box. What will be the volume of the box?



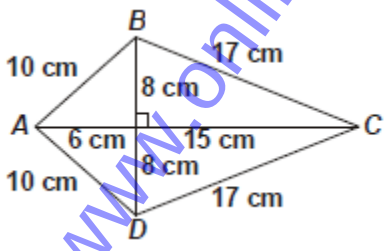
(a) 50 cm^3

(c) 100 cm^3

(b) 75 cm^3

(d) 125 cm^3

13. Figure *ABCD* is a kite. What is the area of figure *ABCD*, in square centimeters?



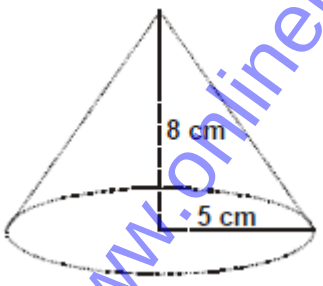
(a) 120

(c) 168

(b) 154

(d) 336

14. A right circular cone has radius 5 cm and height 8 cm. What is the lateral surface area of the cone?



(a) 40 π sq cm

(b) 445 π sq cm

(c) 5 π √39 sq cm

(d) 5 π √89 sq cm

15. If a cylindrical barrel measures 22 cm in diameter, how many cm will it roll in 8 revolutions along a smooth surface?

(a) 121π cm

(b) 168π cm

(c) 176π cm

(d) 228π cm

16. For the quadrilateral shown below, what is $m\angle a + m\angle c$?

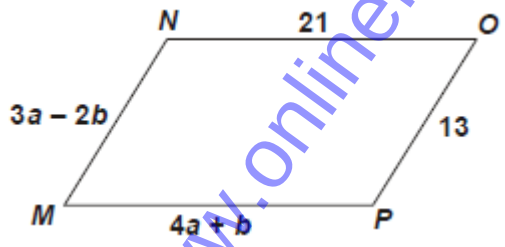
(a) 53^0

(b) 137^0

(c) 180^0

(d) 233^0

17. What values of a and b make quadrilateral $MNOP$ a parallelogram?



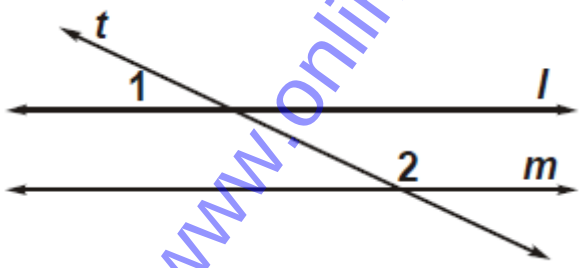
(a) $a = 1$, $b = 5$

(b) a = 5,b = 1

(c) a=11/7,b=34/7

(d) a=34/7,b=11/7

18. In the accompanying diagram, parallel lines *l* and *m* are cut by transversal *t*. Which statement about angles 1 and 2 must be true?



(a) $\angle 1 \cong \angle 2$

(b) $\angle 1$ is the complement of $\angle 2$

(c) $\angle 1$ is the supplement of $\angle 2$

(d) $\angle 1$ and $\angle 2$ are right angles

19. Complete the pattern. 6, 11, 21, 36, 56, (.....)

(a) 42

(b) 51

(c) 81

(d) 91

20. In a certain code, '256' means 'you are good'; '637' means 'we are bad' and '358' means 'good and bad'. Which of the following represents 'and' in that code?

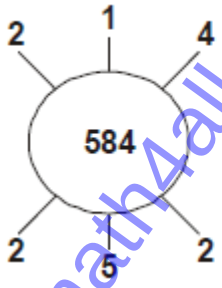
(a) 2

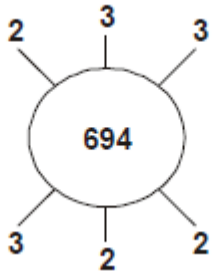
(c) 8

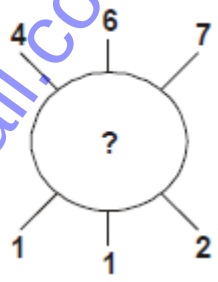
(b) 5

(d) 3

21. Find the missing number:







(a) 937

(c) 769

(b) 824

(d) 678

22. A student got twice as many sums wrong as he got right. If he attempted 48 sums in all, how many did he solve correctly?

(a) 12

(c) 24

(b) 16

(d) 18

23. There are twenty people working in an office. The first group of five works between 8.00 A.M. and 2.00 P.M. The second group of ten works between 10.00 A.M. and 4.00 P.M. And the third group of five works between 12 noon and 6.00 P.M. There are three computers in the office which all the employees frequently use. During which of the following hours are the computers likely to be used most?

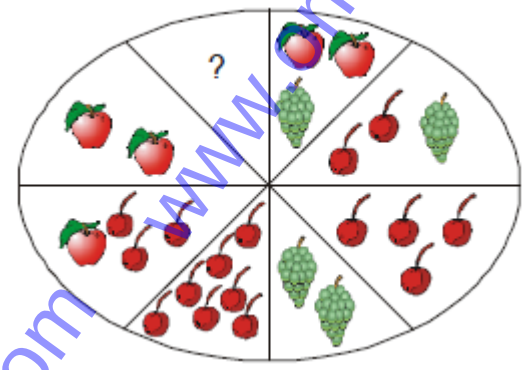
(a) 10.00 A.M. – 12 noon

(c) 1.00 P.M. – 3.00 P.M.

(b) 12 noon – 2.00 P.M.

(d) 2.00 P.M. – 4.00 P.M.

24. Apples, cherries and grapes are arranged on a platter in the following fashion: opposite sectors contain fruit which is of equal value. To equal the value of two bunches of grapes, how much fruit must be placed in the empty sector?



(a) 

(c) 

(b) 

(d) 

25. A person is standing on a staircase. He walks down 4 steps, up 3 steps, down 6 steps, up 2 steps, up 9 steps, and down 2 steps. Where is he standing in relation to the step on which he started?

(a) 2 steps above

(c) The same place

(b) 1 step above

(d) 1 step below

26. On a certain day, a news vendor began the day with P papers. Between opening and noon, he sold 40 percent of the papers, and between noon and closing, he sold 60 percent of the papers which remained. What percent of the original P papers did he sell?

(a) 0%

(b) 20%

(c) 24%

(d) 76%

27. A certain liquid fertilizer contains 10 percent mineral X by volume. If a farmer wishes to treat a crop with 3/4 of a liters of mineral X per acre, how many acres can be treated with 300 liters of the liquid fertilizer?

(a) 40

(b) 24

(c) 18

(d) 16

28. Chandra spent 2/5 of her income of January for rent, and 3/4 of the remainder on other expenses. If she put the remaining $ 180 in her savings account, how much was her income in January?

(a) $1000

(b) $1200

(c) $1400

(d) $1600

29. If the numerator of a fraction is decreased 25 percent and the denominator of that fraction is increased 25 percent, then the difference between the resulting and the original fractions represent what percentage decrease?

(a) 40%

(b) 45%

(c) 50%

(d) 60%

30. **Step 1** : Add 4
Step 2 : Subtract 1
Step 3 : If less than 15, jump to step 1 and continue from there; Otherwise proceed to step 4
Step 4 : Add 3
Step 5 : If greater than 18, subtract 2

If you start with a value of 1 and then apply the above instructions, what is the end result?

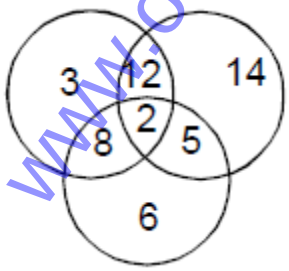
(a) 11

(b) 17

(c) 18

(d) 19

31. Consider the given Venn diagram. The numbers in the Venn diagram indicate the number of persons reading the newspapers. The diagram is drawn after surveying 50 persons. In a population of 10,000 how many can be expected to read at least two newspapers?



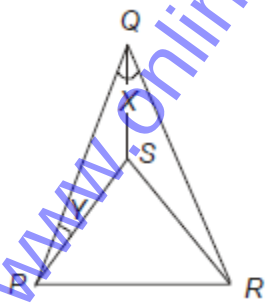
(a) 5000

(b) 6250

(c) 6000

(d) 5400

32. In the given figure if PQR is an isosceles triangle and PSR is an equilateral triangle and $X = 26°$ then the value of Y (in degrees) will be



(a) 17

(c) 37

(b) 27

(d) 47

33. In which of the following quadrilaterals, the diagonals must be equal?

(a) Parallelogram

(c) Rhombus

(b) Trapezium

(d) Square.

34. Each side of a rhombus is 5 cm and one of the diagonals is 8 cm. Calculate the length of another diagonal and the area of the rhombus.

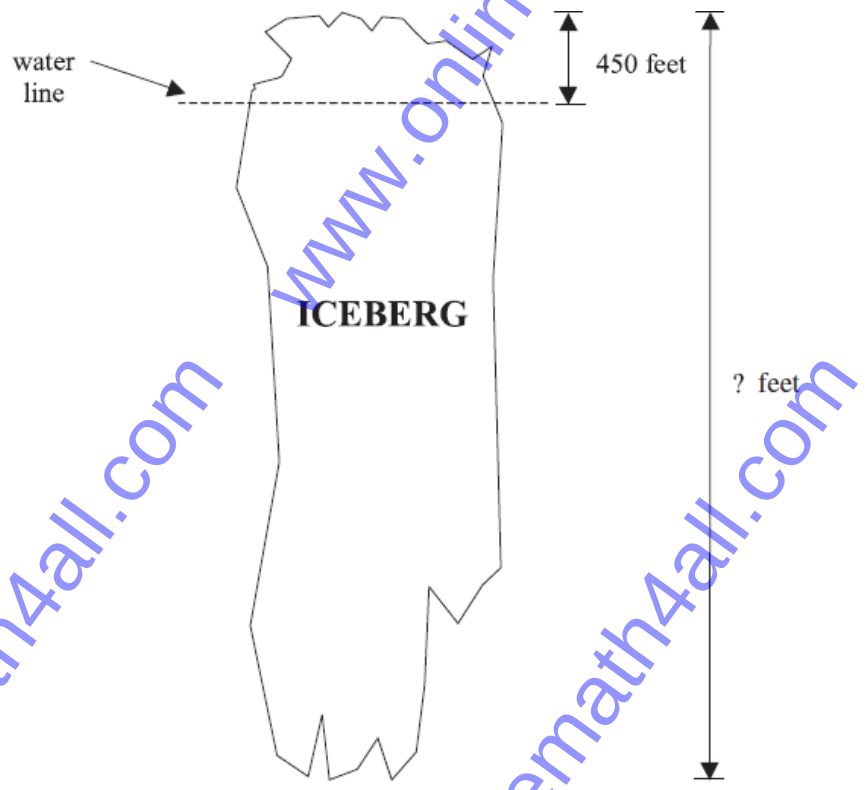
(a) 8 cm, 32 cm^2

(b) 6 cm, 24 cm^2

(c) 4 cm, 16 cm^2

(d) 7 cm, 28 cm^2

35. Only part of an iceberg is visible above the water line. The picture shows an iceberg with a height of about 450 feet above the water line.



Which is the closest to the total height, in feet, of the iceberg?

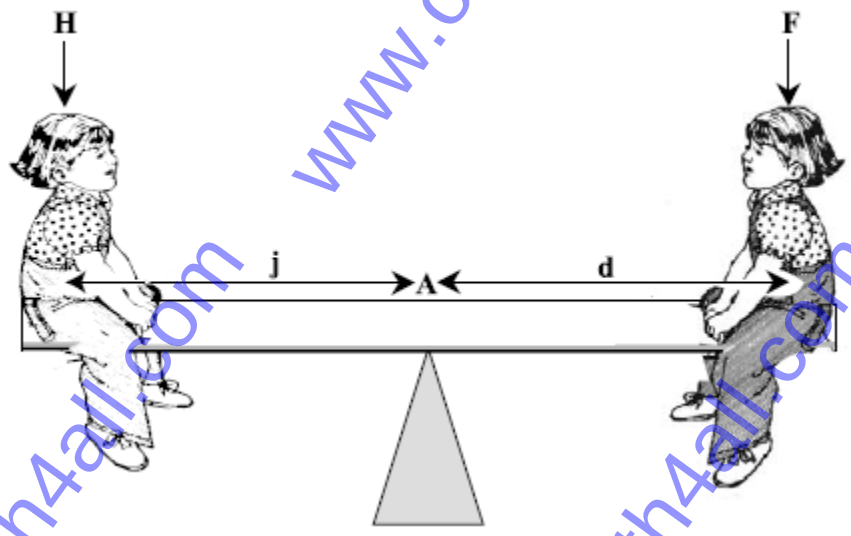
(a) 1000 feet

(b) 2000 feet

(c) 4000 feet

(d) 6000 feet

36. The seesaw shown below is an example of a type of lever. A lever will balance when the product of the force (weight of one child) and the distance on one side of the fulcrum equals the product of the force (weight of the other child) and the distance on the other side.



The fulcrum is at point *A* where the seesaw balances. *H* is the force applied at a distance *j* on one side of the fulcrum and *F* is the force applied at a distance *d* on the other side of the fulcrum. Which of the following equations represents this relationship?

(a) $Fd = Hj$

(b) FH = dj

(c) F/H = d/j

(d) F/J= d/H

37. In developing her science project, Leigh learned that light travels at a constant rate and that it takes 500 seconds for light to travel the 93 million miles from the Sun to Earth. Mars is 142 million miles from the Sun. About how many seconds will it take for light to travel from the Sun to Mars?

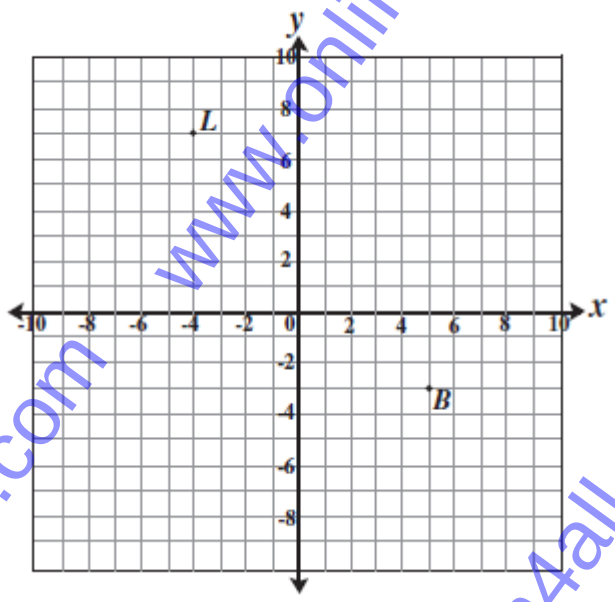
(a) 235 seconds

(b) 327 seconds

(c) 642 seconds

(d) 763 seconds

38. On a coordinate grid, the location of a lighthouse is at *L*, and the location of a buoy is at *B*. At noon, a ship was at the midpoint of the segment connecting *L* and *B* on the grid.



Which coordinates best represent the ship's position at noon?

(a) (2, 1/2)

(b) (1, 1/2)

(c) (1/2, 2)

(d) (1/2,5)

39. Lt. Dahlia Johnson is a jet pilot in the United States Navy. After her jet is launched from the flight deck of an aircraft carrier, the jet's altitude above sea level increases at a constant rate of 95 feet per second. If the flight deck of the carrier is 90 feet above sea level, which equation could be used to find *t*, the number of seconds it will take Lt. Johnson to reach her cruising altitude of 30,000 feet above sea level?

(a) $t = 30{,}000/ 90$

(c) $t= 30{,}000/95$

(b) $t =(30{,}000 - 95)/90$

(d) $t =(30{,}000 - 90)/95$

40. While in Tokyo, Callie spent 547,000 Japanese yen for a strand of pearls. The cost of the pearls was equivalent to $5,000 in U.S. currency. At the time of Callie's purchase, how many yen were equivalent to $20 in U.S. currency?

(a) 109 yen

(c) 5,470 yen

(b) 2,188 yen

(d) 27,350 yen

41. Denise's great-grandfather gave her an antique violin. He paid $18 for the violin 84 years ago. She found that the dollar value of the violin had doubled approximately every 12 years, and that the violin currently had a dollar value of $2,300. If the dollar value of her violin doubles every 12 years, what would be the dollar value of Denise's antique violin in 36 more years?

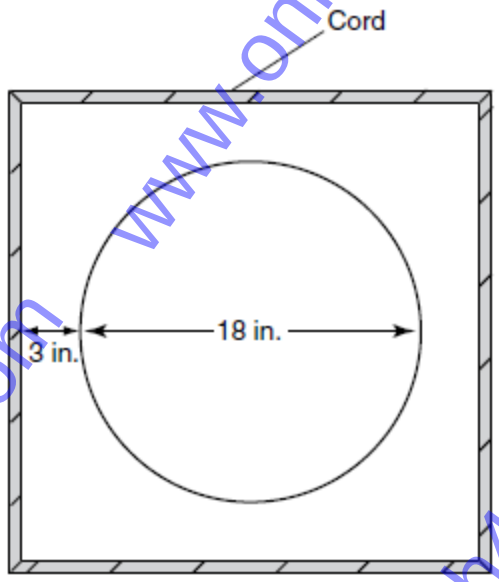
(a) $6,900

(b) $8,100

(c) $18400

(d) $24300

42. Florence has a circular piece of artwork 18 inches in diameter. She wants to display the artwork on a square piece of fabric that has a cord attached to the edges of the square, as shown below. The fabric will extend 3 inches (in.) beyond the artwork.



What is the perimeter, in inches, of the square piece of fabric?

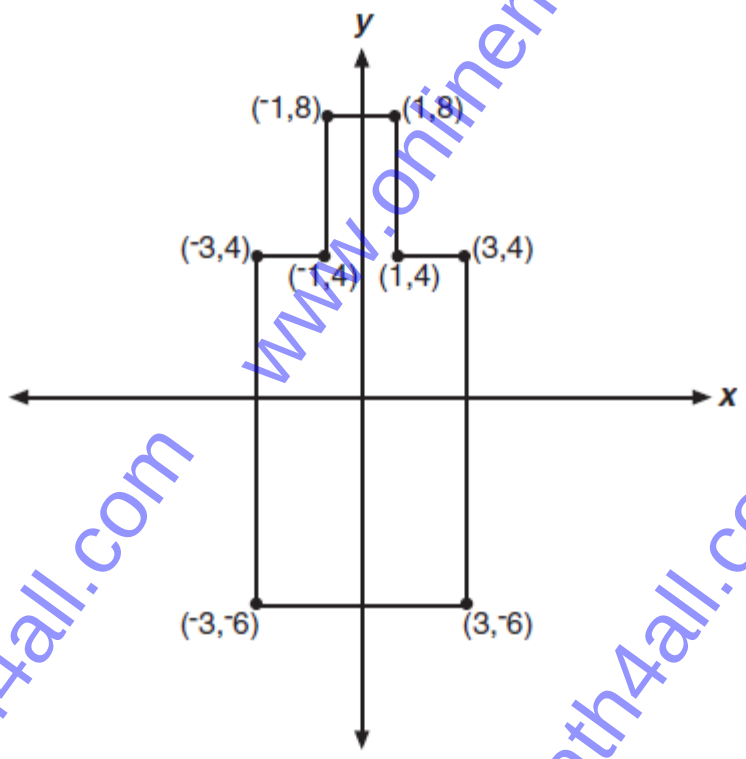
(a) 54 in.

(b) 84 in

(c) 96 in

(d) 108 in

43. The design for a machine part is shown below.



Which of these is a correct statement about the symmetry of the design?

(a) The design is symmetrical only about the *y*-axis.

(b) The design is symmetrical only about the *x*-axis.

(c) The design is symmetrical about both the *y*-and the *x*-axes.

(d) There is no symmetry in the design.

44. A pyrometer is an instrument used to record very high temperatures. It produces a small electric current called a microampere when exposed to heat. The microampere reading indicates the temperature of the substance being measured. The linear relation is shown in the table below.

PYROMETER MEASUREMENTS

Pyrometer Reading (microamperes)	Temperature (degrees Fahrenheit)
5.00	300.0
5.94	356.4
6.88	412.8
7.82	

What should be the temperature, in degrees Fahrenheit, if the pyrometer reading is 7.82 microamperes?

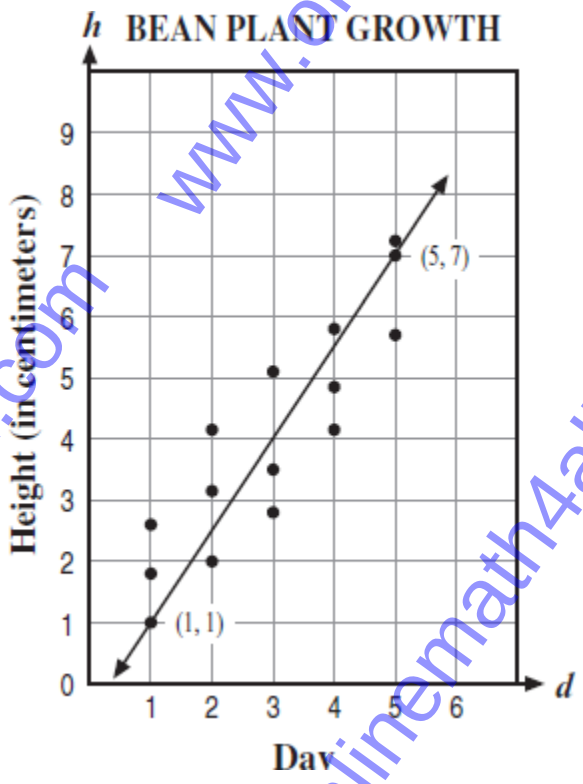
(a) 442.5

(c) 436.5

(b) 469.2

(d) 441.2

45. Jodi is studying plant growth rates for her science project. For her project, she selected three bean plants of equal height. Then, for the next five days, she measured the height, in centimeters, of each plant and plotted the values on the graph below.



She drew a line of best fit passing through points (1, 1) and (5, 7) on the graph to show one way of calculating the mean growth rate of the plants. What is the slope of the line she drew?

(a) 1.5

(b) 1.3

(c) 1.2

(d) 2.3

46. A circle that has a radius of 5 inches has an area of 25π square inches. If the radius is doubled, what is the area of the new circle?

(a) 10 π square inches

(c) 100 π square inches

(b) 50π square inches

(d) 200π square inches

47. Players of a game at the school carnival will be allowed to draw a token for a prize. The prizes include 8 yo-yos, 9 key chains, 12 stuffed animals, 11 movie passes, 16 video rentals, and 14 flying disks. For each prize, there is one token available to be drawn. What is the probability that the first winner to draw a token will win a stuffed animal?

(a) 6/29

(c) 1/6

(b) 6/35

(d) 1/12

48. The numbers of paid subscriptions for four magazine types are shown on the table below.

TOTAL PAID SUBSCRIPTIONS

Magazine Type	Circulation
Business	9.5×10^5
Family	5.0×10^6
Style	9.0×10^5
Teen	2.4×10^6

Which of the following lists these magazine types by circulation from greatest to least?

(a) Business, Style, Family, Teen

(b) Family, Teen, Business, Style

(c) Style, Business, Teen, Family

(d) Teen, Family, Style, Business

49. Dory created four categories to describe different types of newspaper comic strips. She then surveyed 293 high school freshmen to identify the one type of comic strip each student preferred. The results of her survey are shown in the table below.

COMIC STRIP PREFERENCE

Type of Comic Strip	Number of Responses
Political	9
Animal	126
Sports	108
Family	50

Which of the following is closest to the percent of freshmen surveyed who preferred Family comic strips?

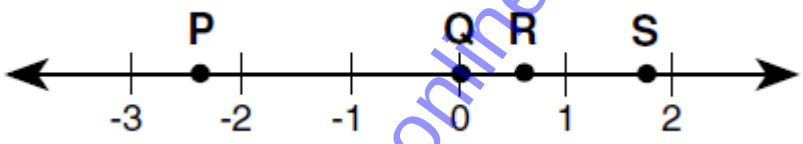
(a) 3%

(b) 5%

(c) 17%

(d) 50%

50. Which point on the number line represents a number that, when cubed, will result in a number greater than itself?



(a) P

(b) Q

(c) R

(d) S

Answers:

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