1. How would you classify –219? Select all that apply.

- ◯ c. Whole Number
- ◯ b. Integer
- ◯ e. Real Number
- ◯ d. Natural Number
- ◯ a. Rational Number

2. Evaluate: $-2x^2+12$ when $x=-3$

- ◯ c. 18
- ◯ d. 30
- ◯ a. –6
- ◯ b. 6

3. Find the compound interest earned on FRW 15 000 invested for 3 years, at 20% p.a. compounded quarterly.

- ○ c. 16005FRW
- ○ d. 21500 FRW
- ○ a. 11 938 FRW
- ○ b. 18500 FRW

4.Which number is equivalent to 6.9×10^6 ?

- ○ d. 700 000
- ○ a. 0.000 006 9
- ○ b. 69
- ○ c. 6 900 000

5.$(9.8 \times 10^3) - (5.7 \times 10^3) =$

- ○ c. 4100
- ○ d. 41000
- ○ a. 4.1

○ b. 410

6. 50 students went bush-walking, 23 were sunburnt, 22 were bitten by ants, 5 were both sunburnt and bitten by ants. Determine the probability that a student chosen at random escape being bitten

○ a. 0.56

○ b. 0.1

○ d. 0.88

○ c. 0.2

7. Solve the equation: $-5(-4m - 8) + 2m = -26$

○ b. $m = -3$

○ a. $m = 11$

○ d. $m = 3$

○ c. $m = -11$

8. Solve the equation: $5(2r - 10) = 2(2r + 5) - 2(2r + 25)$

○ d. $r = 11$

– 2(2r + 25)

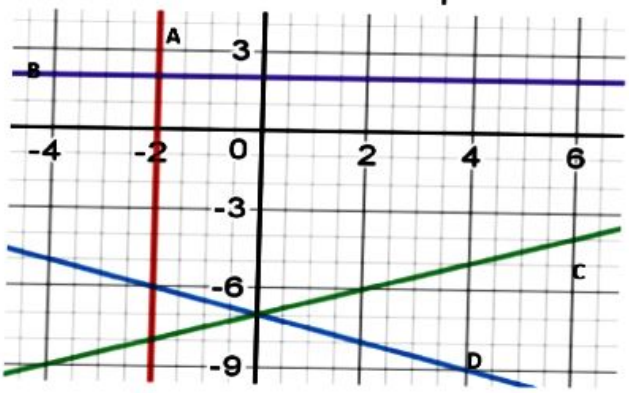
- ◯ d. r = 11
- ◯ c. r = 4
- ◯ b. r = 2
- ◯ a. r = 1

---

9. A coin is tossed twice. What is the probability of getting a tail in both tosses?

- ◯ a. 0.5
- ◯ b. 0.25
- ◯ d. 0.13
- ◯ c. 0.125

10. Which line has a slope of zero?



- ◯ d. Line D
- ◯ c. Line C
- ◯ a. Line A
- ◯ b. Line B

11. Show the line where x=-2 is:

- ◯ d. Cannot be determined
- ◯ b. Vertical
- ◯ c. Neither
- ◯ a. Horizontal

12. Which line is represented by $y+4=-1/2(x+6)$

- ◯ a. Line A
- ◯ b. Line B

13. What is the slope of the line that passes through the points (7, –5) and (6, –3)?

- ○ d. -2
- ○ c. 2
- ○ b. 1/2
- ○ a. –1/2

14. What is the equation of the line that passes through the point (–3, 2) and has the slope of 5? Select all that apply.

- ○ c. $y-2=5(x+3)$
- ○ a. $-5x+y=-13$
- ○ d. $y-2=5(x-3)$
- ○ b. $y=5x+17$

15. Given the system of the equation $y=3x-2$ and $-12x+4y=-20$, which is the point of intersection?

- ○ b. Intersect at (–5, 5)
- ○ c. No Solution
- ○ a. Intersect at (0, 0)
- ○ d. Infinitely Many Solutions

16. Eighteen labourers dig a ditch 80 metres long in 5 days. How long will it take 24 labourers to dig 64 metres long? What assumptions have you made?

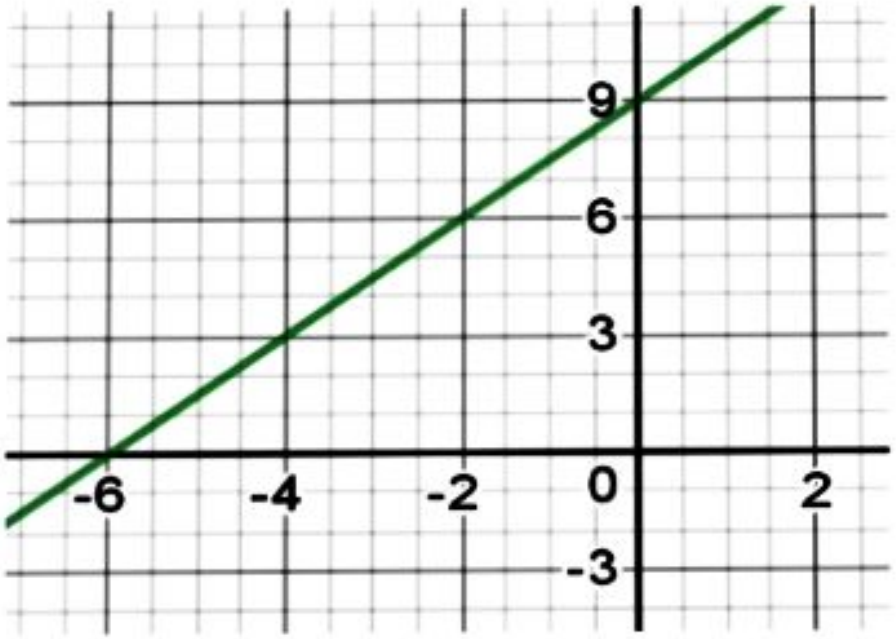
- ◯ b. 1 day
- ◯ a. 3 days
- ◯ c. 6 days
- ◯ d. 2 days

---

17. In a:b=c:d, b and c are:

- ◯ a. Antecedent
- ◯ b. Consequent
- ◯ d. Mean
- ◯ c. Extreme

18. The graph below is the function f(x)= (3/2)x+9. For what value of x does f(x)=0?



○ a. 0

○ b. −2

○ d. −6

○ c. −4

19. A theater sells admission tickets for $5.00 on Wednesday nights. At capacity, the theater holds 500 customers. The function B(n)=5n represents the amount of money the theater takes in on Wednesday nights, where n is the number of customers. What is the domain of B(n) this context?

- ◯ d. All non-negative integers less than or equal to 500
- ◯ b. All non-negative rational numbers
- ◯ c. All non-negative integers that are multiples of 5
- ◯ a. All whole numbers

20. The cost to manufacture x calculators can be represented by a function, $C(x) = (110 - x)x$. Select from the drop-down menus to correctly complete the statement about the functions C.

If $C(x) = (110 - x)x$, then **calculators cost $ __**

- b. 52
- a. 87
- d. 3150.00
- c. 525.00

21. In the equation $y=35(5^x)$, what value does the 35 represent?

- a. x-intercept
- d. growth rate
- c. growth factor
- b. y-intercept

22. What is the y-intercept of the following exponential relationship?

x	1	2	3	4	5
y	200	800	3200	12800	51200

- b. 0
- d. 200
- c. 4
- a. 50

23. Suppose there is an initial rabbit population in the forest of 10,000 rabbits. The growth factor for the population is 1.7 per year. How large will the rabbit population be in year 2?

- ○ c. 49,130 rabbits
- ○ d. 28,900 rabbits
- ○ b. 17,000 rabbits
- ○ a. 10,000 rabbits

24. Given that S(2,3) and T(-2,5) are two cartesian points, find |ST|.

- a. 25 units
- b. 4.472 units
- c. 3.567 units
- d. 24 units

25.Two dice are thrown together. Find the probability of getting a sum greater than 9

- ○ c. 0.25
- ○ d. 0.33
- ○ a. 0.22
- ○ b. 0.16

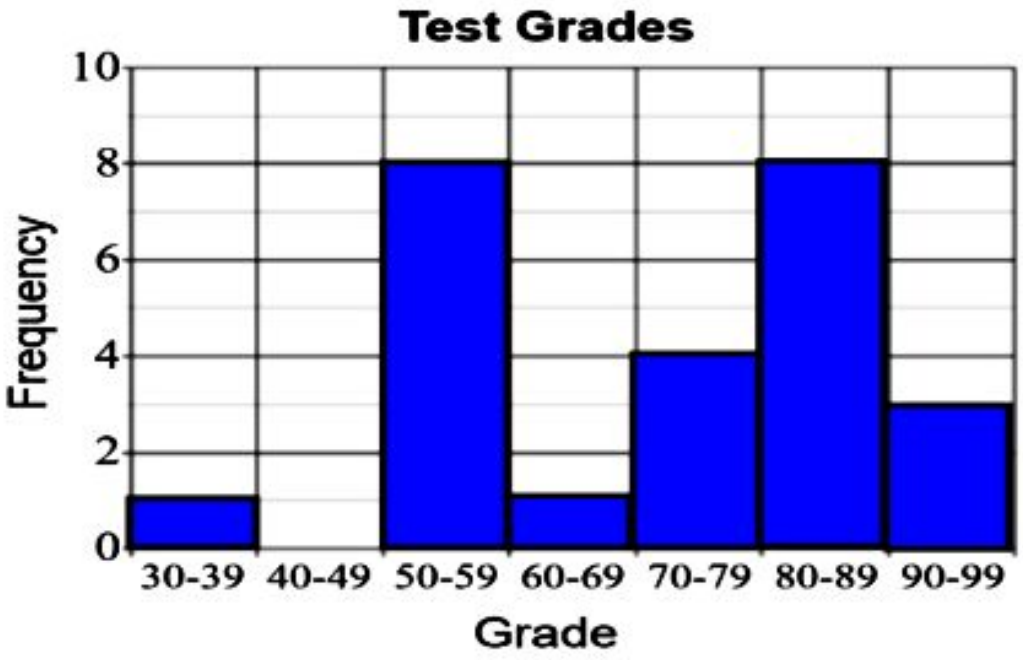
26. A bag A contains 5 red balls and 3 green balls. The second bag B contains 4 red and 6 green balls. A bag is selected at random and two balls are picked from it one after the other without replacement. Find the probability of getting both balls of different colors from different bags.

- ◯ d. 0.5
- ◯ b. 0.842
- ◯ c. 0.781
- ◯ a. 0.178

27. Daka borrows 3 800 FRW from Jane at 10% p.a. compound interest. At the end of each year, he pays back 910 FRW. How much does he owe Jane at the beginning of the third year?

- ◯ d. 1880 FRW
- ◯ c. 2687 FRW
- ◯ a. 3580 RFW
- ◯ b. 4580 FRW

28. Use the histogram to determine the number of students that scored below 80 on the test.



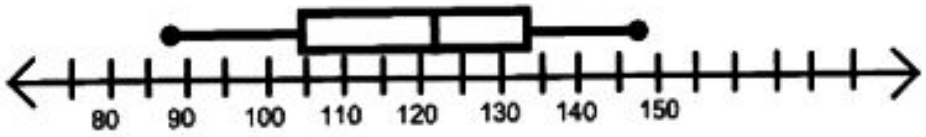
○ b. 6

○ d. 14

○ c. 8

○ a. 4

29. Use the box and whisker graph to determine answer choice that makes the sentence a true statement. 75% of the data is .



- a. between 105 and 147
- d. between 105 and 132
- c. between 122 and 147
- b. between 87 and 122

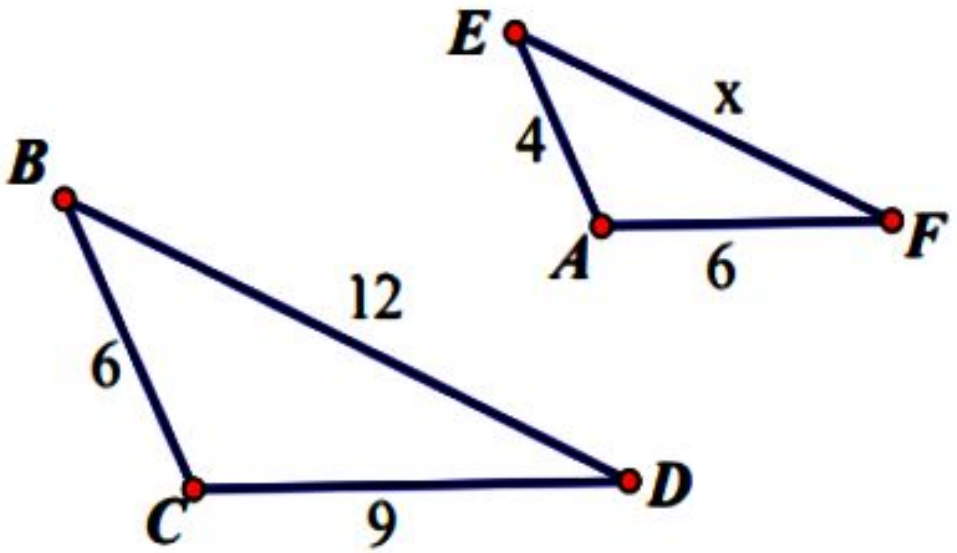
30. C is between A and B. If AC=4x, AB=3x+12, and CB=10, then AB=

- ○ c. 12
- ○ d. –2
- ○ a. 2
- ○ b. 18

31. ∠ABC is a right angle. Vector BX bisects ∠ABC. Find the value of x if m∠ABX=(2x-3)°

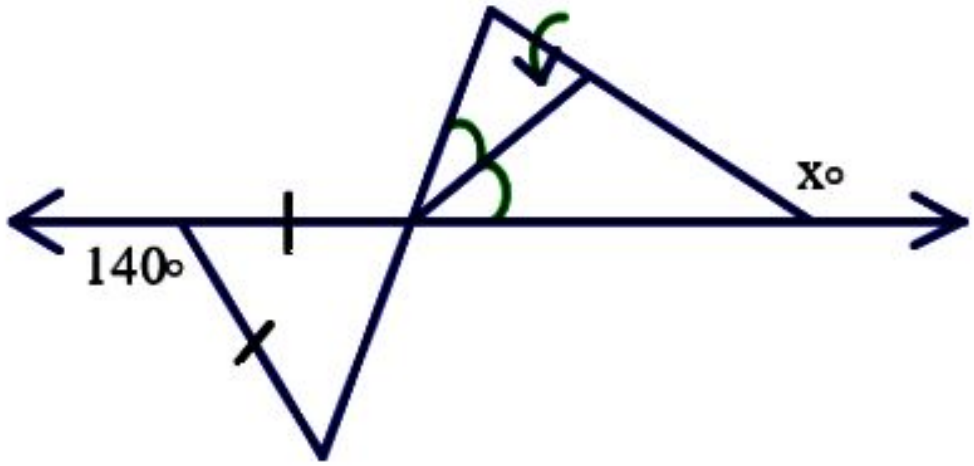
- b. x= 45
- c. x= 24
- d. x= 21
- a. x= 87

32. ΔBCD~ΔEAF. Find the value of x.



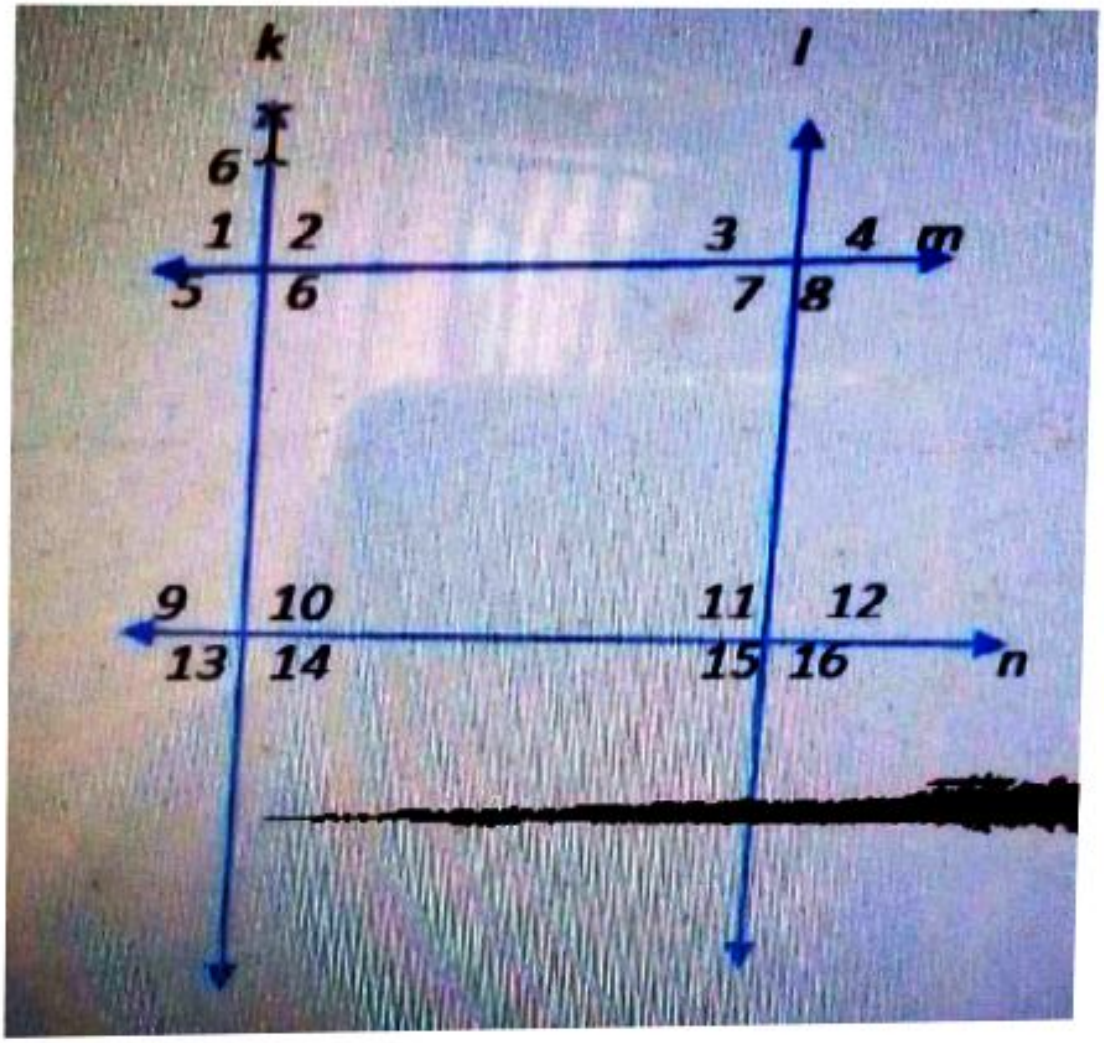
- ○ c. x= 16
- ○ a. x= 8
- ○ d. x= 18
- ○ b. x= 9

33. What is the value of x?



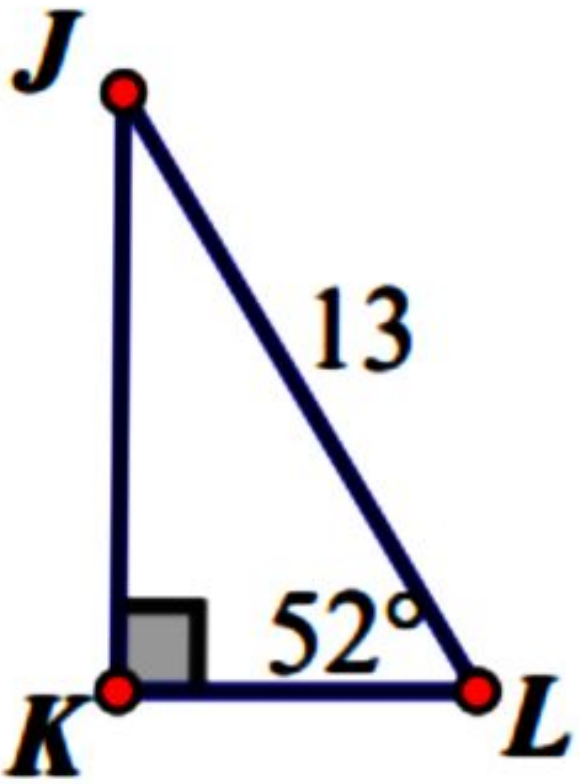
- a. 165
- d. 120
- c. 140
- b. 155

34. Given k||l, m∠7=(4x-20)°,and m∠1=(6x-40)°, find m∠6



- ◯ c. 24°
- ◯ a. 10°
- ◯ d. 104°
- ◯ b. 20°

35. What is the length of JK?



- ◯ d. Not enough information
- ◯ a. 13tan(52°)
- ◯ c. 13cos(52°)
- ◯ b. 13sin(52°)

36. The coordinates of two points, M and N on a Cartesian plane are (6,7) and (2, -1) respectively. Find the magnitude of MN

- ○ b. 95
- ○ c. 8.944
- ○ a. 346
- ○ d. 84

37. The surface area of a box with length 8 cm and width 10 cm is 220 cm^2. Find the height.

- ○ b. 1.67 cm
- ○ d. 3.33 cm
- ○ a. 0.8 cm
- ○ c. 2.8 cm

38. Given that A = {3, 4, 5, 6, 7, 8} and B = {2, 4, 8, 12 }. Find: A – B

B = {2, 4, 8, 12 }. Find: A – B

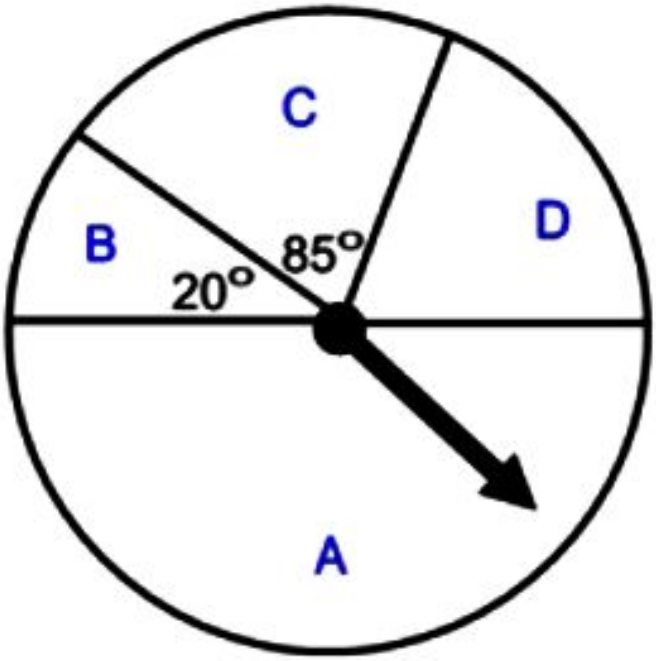
Find: A – B

- ◯ c. {2,3,5,6,7,12}
- ◯ d. 5
- ◯ a. {3, 5, 6, 7}
- ◯ b. {2, 12}

39.The midpoint of the points A (3, 8) and B (-9, 2) is:

- ○ a. (3,3)
- ○ d. (5,3)
- ○ b. (-2,-2)
- ○ c. (-3,5)

40. Using the spinner shown below, find P(C).



○ b. 19/72

○ a. 17/72

○ d. 1/4

○ c. 13/72

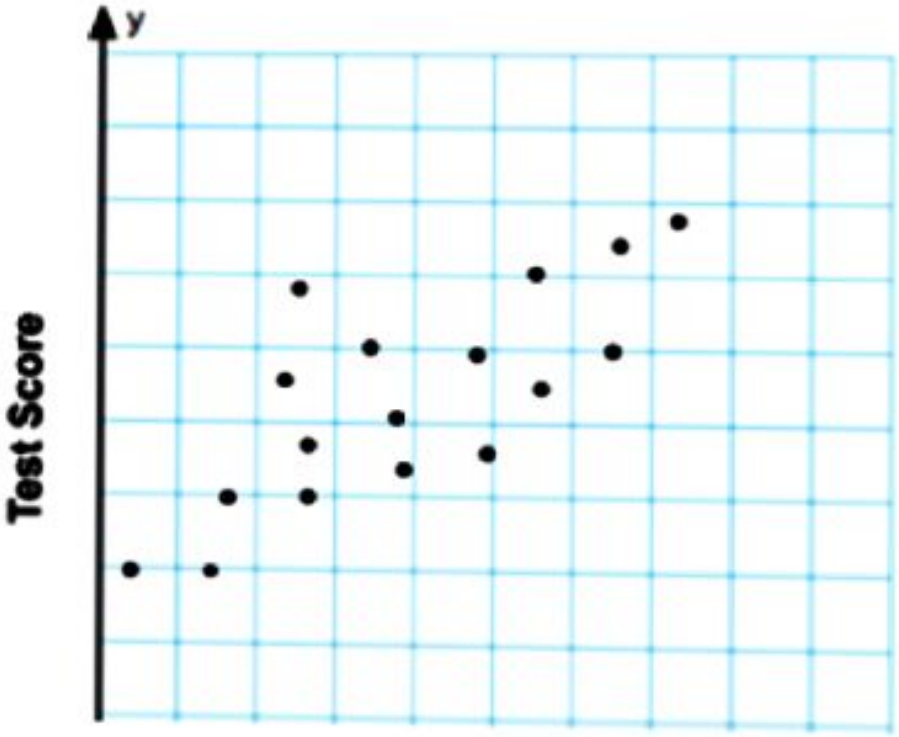
41. In order for the solution to a system of equations to be infinitely many, what must be true of the lines represented?
Choose All that apply

- ◯ c. Different y-intercept
- ◯ d. Same y-intercept
- ◯ a. Different slope
- ◯ b. Same slope

42. Indicate whether the system of linear equations $4x+y=4$ and $8x=8-2y$ has

- ○ b. One solution
- ○ c. Infinitely many solutions
- ○ a. No solutions
- ○ d. None

43. What kind of scatter plot is shown below?

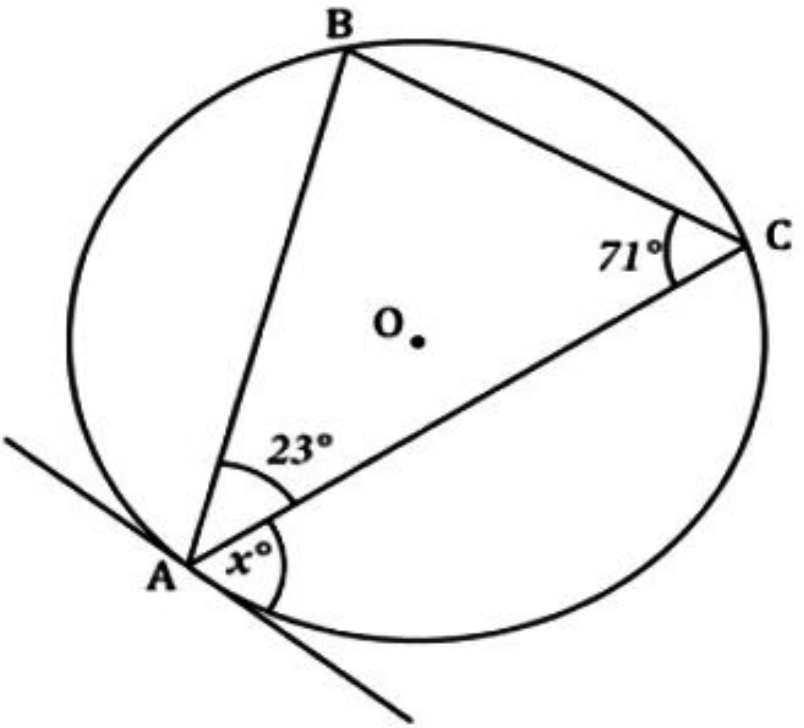


- b. Linear, negative correlation
- c. Non-linear
- a. Linear, positive correlation
- d. Linear, no correlation

44. For two vectors defined by an arrow with a head and a tail. The length of each vector and the angle between them represents:

- a. Their magnitude and direction of the line of action, respectively
- b. Their magnitude's square and direction of the line of action, respectively
- c. Magnitude's square and the ratio of their lengths, respectively
- d. Magnitude's square root and direction of the line of action, respectively

45. Given that angle BAC is 23° and angle ACB is 71° at the graph to the right, the size of angle x° is:



○ d. 109°

○ c. 94°

○ b. 86°

○ a. 71°

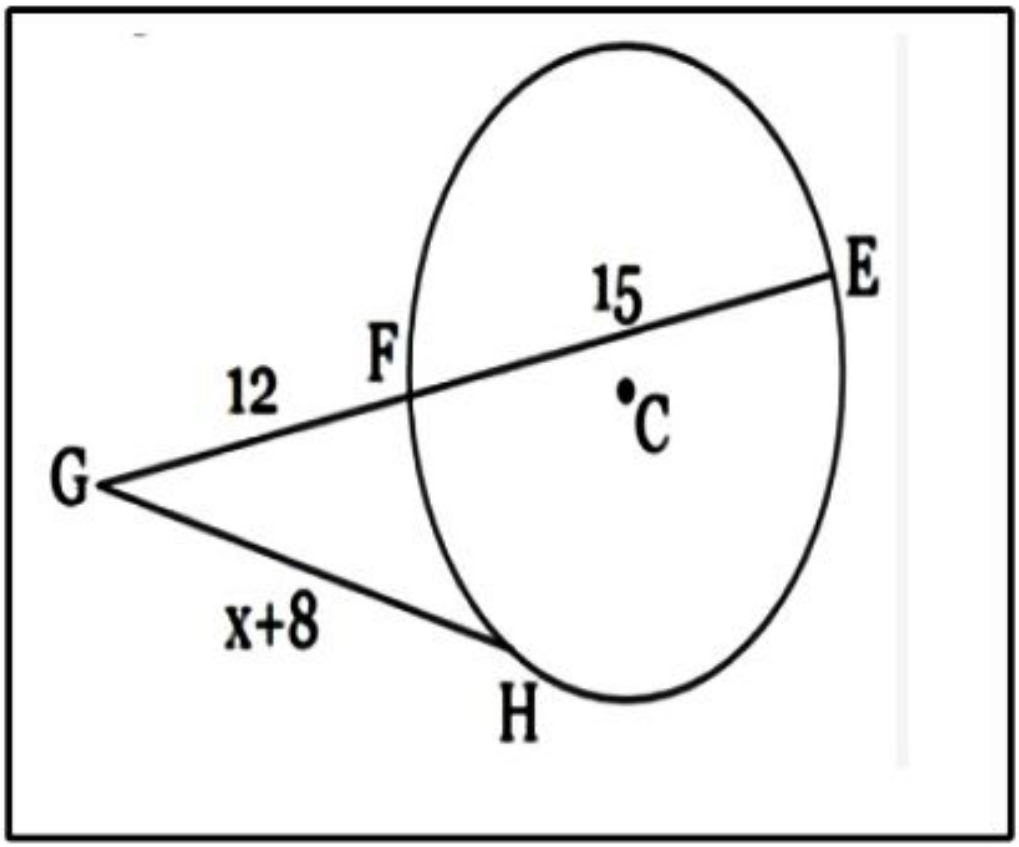
46. If A is any vector with Ai + Bj + Ck, then what is the y-axis component of the vector?

- ◯ d. The square root of a sum of squares of the three, i.e., A, B, and C
- ◯ c. C units
- ◯ a. A units
- ◯ b. B units

47. The points with position vectors $60i+3j$, $40i-8j$, $ai-52j$ are collinear if

- ○ c. a=20
- ○ d. none of these
- ○ b. a=40
- ○ a. a=-40

48. What is the length of GH in the circle below?



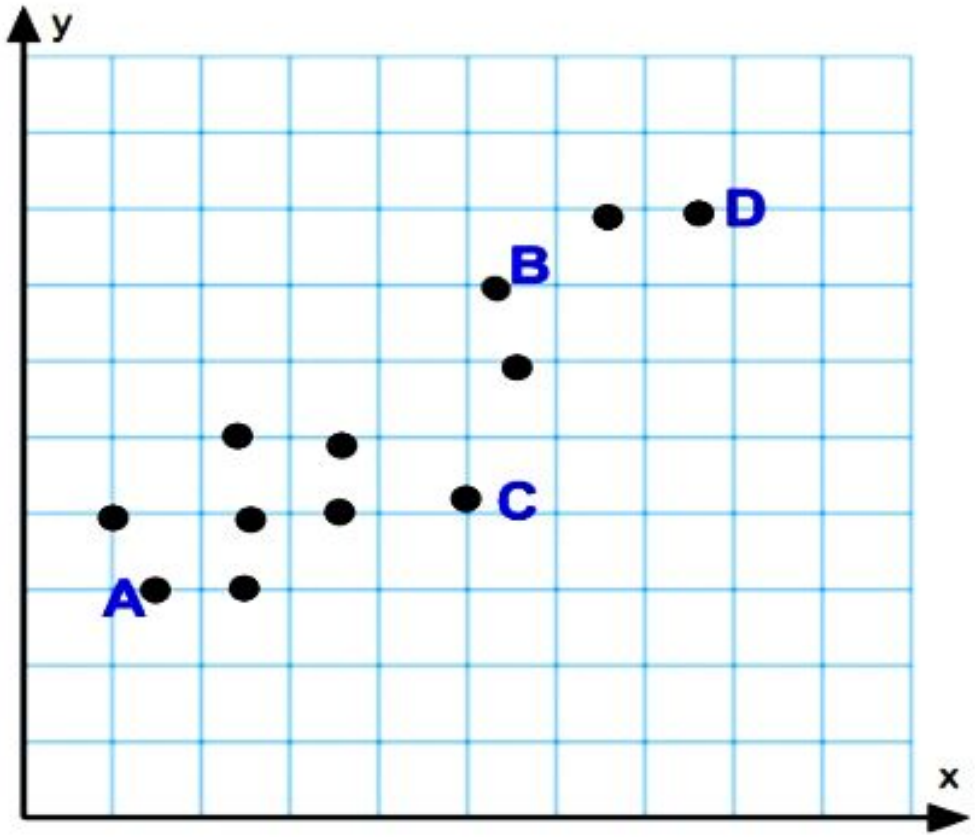
○ b. 12

○ a. 10

○ d. 4

○ c. 18

49. For the graph below, which two points would you use to draw the line of best fit?



- ◯ d. C and D
- ◯ c. A and D
- ◯ a. A and B
- ◯ b. A and C

50. A ladder, 3.9 m long, leans against a wall. If its foot is 1.2 m from the wall, how high up the wall does it reach?

This is the last question

- ○ c. 5.71m
- ○ b. 12.1m
- ○ d. 4.04m
- ○ a. 3.71m