

1. Combine like terms: $6a^2 - 10a - 5 + 3a^2 + 7a - 2$
- A) $9a^2 + 3a + 7$ B) $9a^2 - 17a + 7$ C) $9a^4 - 7$ D) $9a^2 - 3a - 7$

2. Simplify: $\left(\frac{y^3}{z^6}\right)^2$

- A) $\frac{y^6}{z^3}$ B) $\frac{y^3}{z^6}$ C) $\frac{y^6}{z^{12}}$ D) $\frac{y^9}{z^{36}}$

3. Solve: $4(x - 2) - 2x = x - 6$
- A) 2 B) 0 C) 1 D) -4

4. A student worked in a candy store. They earned \$15 per day, plus \$5 for each case of candy they sold. Which of the following expressions describes the student's daily earnings, if x is the number of cases sold per day?

- A) $5x + 15$ B) $5(x + 15)$ C) $15x + 5$ D) $15(x + 5)$

5. Find the slope of the line passing through the points (8, 3) and (-10, 5).

- A) -9 B) $-\frac{1}{9}$ C) 9 D) $\frac{1}{9}$

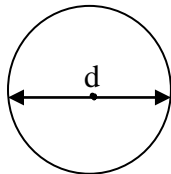
6. Find the median of 22, 20, 19, 24, 23, 21, 19:

- A) 21 B) 19 C) 24 D) 20

7. A rectangular prism has a length of 10 cm and width of 20 cm. If the volume of the prism is 400 cm^3 , find the height. (Volume of a rectangular prism is $V = LWH$).

- A) 5 cm B) 2 cm C) 4 cm D) 10 cm

8. Find the circumference of the circle if $d = 10$ yd. Use $\pi = 3$.



- A) $C = 150$ yd B) $C = 15$ yd C) $C = 300$ yd D) $C = 30$ yd

9. Solve: $18x - 7 = -14 - 3x$

- A) $\frac{1}{3}$ B) -1 C) $-\frac{1}{3}$ D) -3

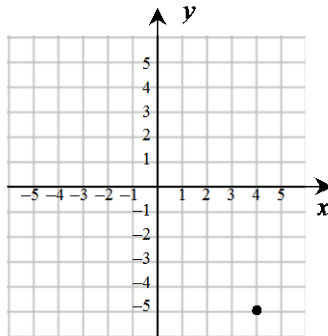
10. Divide and simplify: $\frac{90m^4}{9m^{-1}}$

- A) $81m^5$ B) $81m^3$ C) $10m^5$ D) $10m^3$

11. A survey is taken to determine the number of Seneca college students that use calculators. Which of the following would be a representative sample?

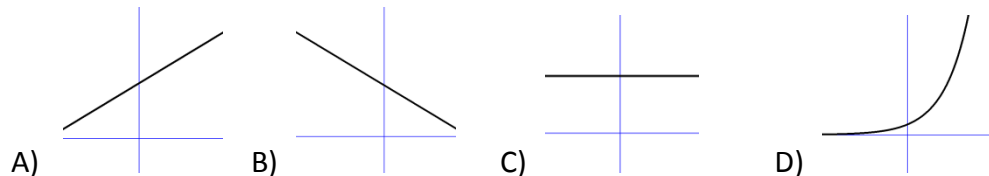
- A) only students in first year
B) every second student in a first semester class
C) a random selection of students in a college math club
D) 50 males and 50 females selected randomly from a college student list

12. Give the coordinates of the point graphed below.



- A) $(-5, 4)$ B) $(5, -4)$ C) $(-4, 5)$ D) $(4, -5)$

13. Which of the following graphs represents a decreasing relationship?



14. Subtract $4b^2 - 3b - 6$ from $7b^2 + 4b - 3$.

- A) $3b^2 + 7b + 3$ B) $3b^2 + 7b - 3$ C) $-3b^2 - 7b - 3$ D) $3b^2 - b + 3$

15. Simplify the expression: $9^3 \times 9^8$

- A) 9^{24} B) 9^{11} C) 81^2 D) 81^{11}

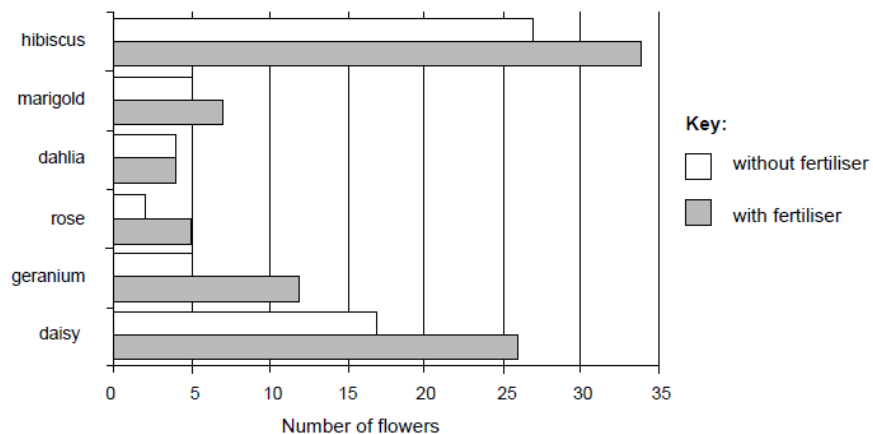
16. If $x = -1$, which expression has the largest value?

- A) $x^2 + 3x$ B) $10 - 3x$ C) $x - 15$ D) $3x(2x + 10)$

17. Multiply: $(m - 3n)(m + 3n)$

- A) $m^2 - 9n^2$ B) $m^2 + 9n^2$ C) $m^2 - 6mn + 9n^2$ D) $m^2 + 6mn - 9n^2$

The bar graph below represents the number of flowers on various plants with fertilizer (shaded bars) and without fertilizer (unshaded bars). Answer the following questions (# 18, 19 and 20) based on the graph.



18. When fertilizer is added, the number of flowers increases for

- A) hibiscus only
B) hibiscus and daisies only
C) all of the flowers except dahlia, which remains the same
D) all of the flowers

19. When fertilizer is added, the number of rose flowers increases

- A) from 2 to 4 B) from 0 to 4 C) from 2 to 5 D) from 2 to 10

20. Without fertilizer, the geranium produces

- A) 0 flowers B) 5 flowers C) 10 flowers D) 12 flowers

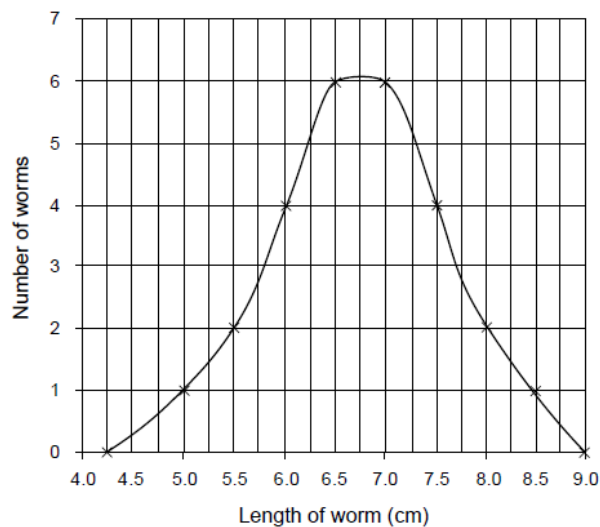
21. Evaluate: $c^2 - d^2$ if $c = 6$, and $d = -5$.

- A) 11 B) -11 C) -11 D) 61

22. Which of the ordered pairs is a solution for the equation $2x - 4y = 8$?

- A) (-2, -2) B) (0, -2) C) (-2, 0) D) (-2, 2)

The graph below represents the number of worms found in a certain area plotted against the length of each worm found. Answer the following questions (#23 and #24) based on the graph.



23. The greatest proportion of worms found had a length of

- A) 4.25 cm B) 6.0 cm C) 6.75 cm D) 9.0 cm

24. How many worms had a length of 7.5 cm?

- A) 4 B) 3 C) 1 D) 5

25. A person walks 10 km in 2 hours. How many km will that person walk in 1 day (travelling at the same speed)?

- A) 240 km B) 120 km C) 20 km D) 480 km

26. Solve for x : $3(4x + 5) = -8x + 55$

- A) -10 B) -2 C) 10 D) 2

27. The sides of a rectangle can be represented by x , $x+3$, $2x+5$, and $4x-4$. What is the perimeter?

- A) $(x)(x+3)(2x+5)(4x-4)$
B) $8x^4 - 3$
C) $6x+4$
D) $8x+4$

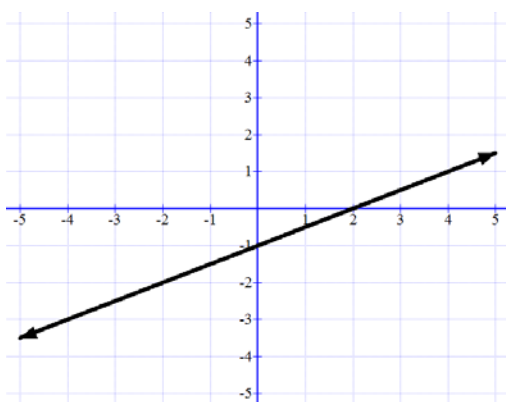
28. The formula ${}^{\circ}C = \frac{5}{9}({}^{\circ}F - 32)$ converts temperatures in Fahrenheit to Celsius. Find the Celsius equivalent of $122{}^{\circ}F$.

- A) $50{}^{\circ}C$ B) $62{}^{\circ}C$ C) $5{}^{\circ}C$ D) $68{}^{\circ}C$

29. The area of a parallelogram with a base of 40 cm and altitude of 60 cm is:

- A) 120 cm^2 B) $2\,400\text{ cm}^2$ C) $1\,200\text{ cm}^2$ D) 240 cm^2

30. What is the slope of the line in the graph below?



- A) $-\frac{1}{2}$
B) $\frac{1}{2}$
C) -2
D) 2

