

Practice Test 1

Directions: Solve each problem, choose the correct answer, and then fill in the corresponding oval on your answer document.

1 Simplify: $18 + 3^3 - 20 \div 5$

- A 59
- B 41
- C 23
- D 5

2 What is the mode(s) for the data?

4, 7, 6, 4, 3, 7, 4, 2

- E 4
- F 5
- G 7
- H There is no mode for this data.

3 Simplify: $11x - 13x + \frac{9x - 15x}{3}$

- A $-14x$
- B $-5x$
- C $-4x$
- D $2x$

4 A spinner is divided into 12 equal sections. The 12 sections are labeled: A, A, C, E, B, E, D, B, B, A, D, and A. What is the probability of spinning an A?

- E $\frac{1}{4}$
- F $\frac{1}{3}$
- G $\frac{1}{2}$
- H $\frac{3}{4}$

5 Simplify: $4(3x^2 + 8x) + 3(-2x^2 + 5)$

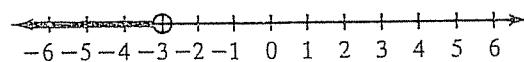
- A $5x^2 + 8x + 5$
- B $6x^2 + 8x + 5$
- C $5x^2 + 32x + 15$
- D $6x^2 + 32x + 15$

6 What is the median of the set of data?

18, 35, 26, 16, 13, 42

- E 18
- F 22
- G 24
- H 35

7 What inequality is graphed below?



- A $x < -3$
- B $x > -3$
- C $x \geq -3$
- D $x \leq -3$

8 Simplify: $\frac{6x + y}{2} - \frac{4x - 6y}{4}$

- E $2x + 2y$
- F $-x + 7y$
- G $2x + 8y$
- H $8x + 7y$

9 Simplify: $3.8x - 4.2x^2 + 5.7x + 6.1x^2$

- A $-1.9x^2 + 9.5x$
- B $1.9x^2 + 9.5x$
- C $10.8x^2 + 9.5x$
- D $10.8x^2 - 1.9x$

10 Simplify: $(3x - 4)(5x + 2)$

- E $15x^2 - 26x - 2$
- F $15x^2 + 5x - 8$
- G $15x^2 - 14x - 8$
- H $15x^2 - 3x - 8$

11 Which of the following does NOT equal 3?

- A $3\% \times 10 + 2.7$
- B $|\sqrt{-9} + 1| + 1^4$
- C $2(12 + 27 \div 3^2) \div 10$
- D All of the above equal 3

12 Simplify: $(-2x^3)(4x^2)^3$

- E $-128x^9$
- F $-24x^9$
- G $-128x^8$
- H $-24x^8$

13 Which is equivalent to $(x - 3)^2$?

- A $x^2 - 6x - 9$
- B $x^2 - 6x + 9$
- C $x^2 - 9$
- D $x^2 + 9$

14 Factor: $b^2 + b - 42$

- E $(b + 7)(b + 6)$
- F $(b - 7)(b + 6)$
- G $(b - 7)(b - 6)$
- H $(b + 7)(b - 6)$

15 Factor: $125x^3 - 45x$

- A $5x(5x + 3)(5x - 3)$
- B $5(25x + 3)(5x - 3x)$
- C $5x(5x - 3)(5x - 3)$
- D $5x(5x + 3)(5x + 3)$

16 What is the greatest common factor of $15x^3y$ and $20x^2y^2$?

- E xy
- F $5x^2$
- G $5x^2y$
- H $5xy$

17 Solve: $-7x + 2 = 16$

- A $\frac{18}{7}$
- B 2
- C -2
- D $-\frac{18}{7}$

18 A group of 10 people split into 3 groups. Group A had 5 people, Group B had 3 people, and Group C had 2 people. If a person is selected at random, what is the probability they are in group A?

- E $\frac{1}{10}$
- F $\frac{1}{5}$
- G $\frac{1}{3}$
- H $\frac{1}{2}$

19 Solve: $8(2c + 5) \leq 8$

- A $c \leq -2$
- B $c \geq -2$
- C $c \geq 3$
- D $c \leq 3$

20 Solve: $-\frac{3}{5}x = 3x + 1$

- E -1
- F $-\frac{15}{18}$
- G $-\frac{5}{18}$
- H $-\frac{1}{18}$

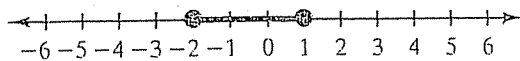
21 Solve: $3x + 8 = x - 2$

- A -5
- B -3
- C $-\frac{5}{2}$
- D -2

22 A bag contains 4 red marbles and 6 blue marbles. Two marbles are drawn at random with replacement. What is the probability that the first marble is red and the second marble is blue?

- E $\frac{1}{2}$
- F $\frac{2}{5}$
- G $\frac{6}{25}$
- H $\frac{4}{25}$

23 What inequality is graphed below?



- A $2 < x < -1$
- B $-2 < x < 1$
- C $2 \leq x \leq -1$
- D $-2 \leq x \leq 1$

24 Solve: $3x^2 = 12$

- E -2, 2
- F -1, 1
- H 0
- H -2

25 Solve: $\frac{4}{5}x - 2 \leq -6$

- A $x \geq -5$
- B $x \leq -5$
- C $x \geq -10$
- D $x \leq -10$

26 Solve: $3x^2 - x + 2(x - 1) = 0$

- E $\frac{3}{2}, 1$
- F $\frac{3}{2}, -1$
- G $\frac{2}{3}, -1$
- H $\frac{2}{3}, 1$

27 Solve: $2x^2 + 7x - 4 = 0$

- A 2, 4
- B 2, -4
- C $\frac{1}{2}, 4$
- D $\frac{1}{2}, -4$

28 What is the solution of the following system of linear equations?

$$\begin{aligned} 2x + 3y &= 4 \\ x - y &= -3 \end{aligned}$$

- E (-1, -2)
- F (-1, 2)
- G (1, -2)
- H (1, 2)

29 Which of these tables represents the function $y = 2x - 3$?

A

x	y
2	-1
3	-4
-1	8

B

x	y
2	-8
3	-11
-1	1

C

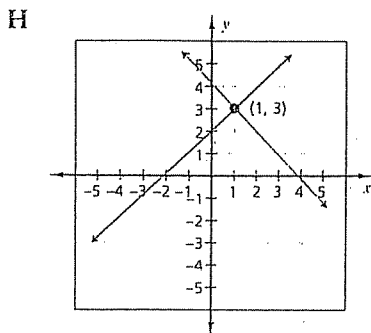
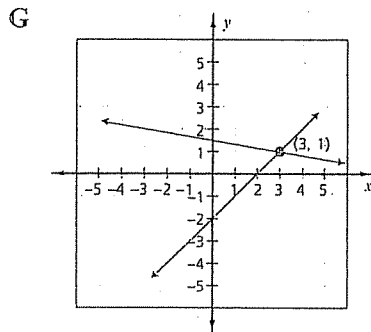
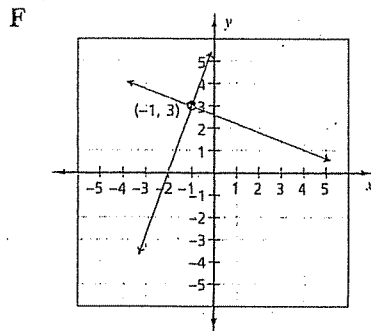
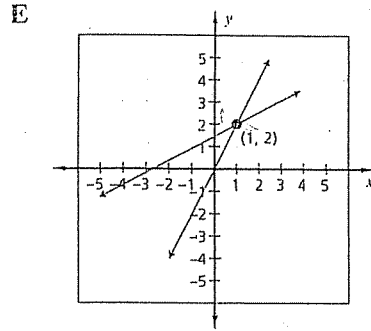
x	y
2	1
3	3
-1	-5

D

x	y
2	12
3	10
-1	2

30 Which of these graphs could be used to find the solution for the following system of equations?

$$\begin{aligned} y &= x + 2 \\ x + y &= 4 \end{aligned}$$



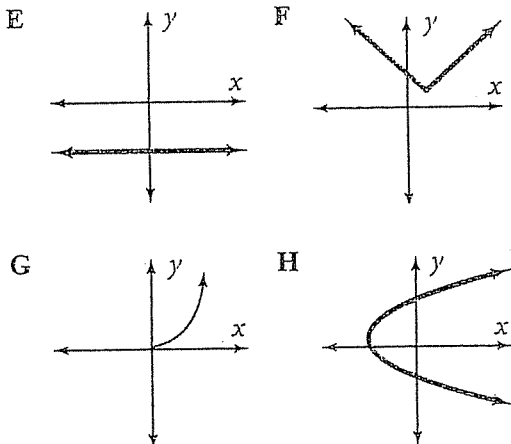
31 What is the solution of the following system of linear equations?

$$y = 2x + 1$$

$$3x + y = 21$$

- A $(\frac{22}{5}, \frac{49}{5})$
- B (4, 9)
- C (2, 5)
- D (0, 1)

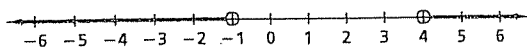
32 Which is NOT the graph of a function?



33 Solve: $-11x - 9 > 3x + 5$

- A $x > 1$
- B $x < 1$
- C $x > -1$
- D $x < -1$

34 What inequality has the solution shown on the graph?



- E $3x + 2 \leq -1$ or $2x + 4 \geq 12$
- F $3x + 2 < -1$ or $2x + 4 > 12$
- G $-1 \leq 3x + 2 \leq 14$
- H $-1 < 3x + 2 < 14$

35 What is the range of this function?
 $\{(-2, 1), (-1, -3), (3, 4), (6, -2)\}$

- A $\{-2, -1, 3, 6\}$
- B $\{-3, -2, 1, 4\}$
- C $\{-3, 3\}$
- D $\{-3, -1, 2, 8\}$

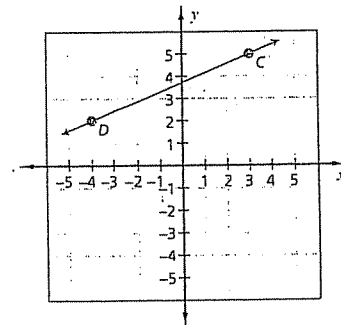
36 If $f(x) = -x^2 + 6x - 5$, what is $f(2)$?

- E 53
- F 11
- G 3
- H 1

37 What is the length of segment CD shown in the graph below?

Distance formula:

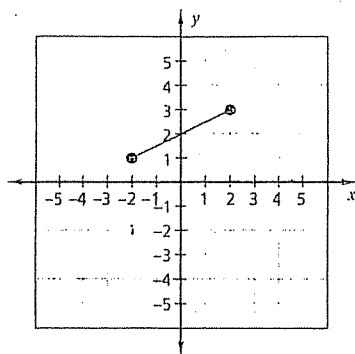
$$D = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$



- A $\sqrt{58}$
- B $5\sqrt{2}$
- C $\sqrt{10}$
- D $2\sqrt{2}$

38

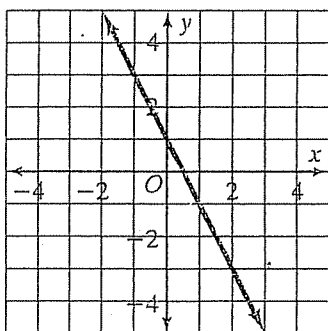
What is the range of the function shown on the graph?



- E $1 \leq y \leq 2$
- F $-2 \leq y \leq 3$
- G $1 \leq y \leq 3$
- H $-2 \leq y \leq 2$

39

Which of the equations represent the graph below?

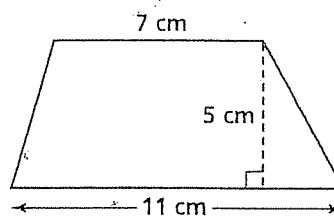


- A $y = -\frac{1}{2}x + 1$
- B $y = 2x + 1$
- C $y = -2x - 1$
- D $y = -2x + 1$

40

What is the area of this figure?

Use $A = \frac{1}{2}h(b_1 + b_2)$.



- E 33 centimeters squared
- F 43 centimeters squared
- G 45 centimeters squared
- H 54 centimeters squared

41

If a circular tank has a diameter of 14 feet, what is the area of the bottom of the tank to the nearest square foot?

Use $A = pr^2$ and $p = 3.14$.

- A 615 square feet
- B 154 square feet
- C 88 square feet
- D 44 square feet

42

Which relation is NOT a function?

- E $\{(2, -2), (3, -1), (4, 0), (5, 1), (6, 2), (7, 3)\}$
- F $\{(-5, 4), (-3, 4), (-1, 4), (1, 4), (3, 4), (5, 4)\}$
- G $\{(6, 2), (5, 8), (4, 13), (11, 9), (2, 8), (13, 4)\}$
- H $\{(9, 7), (9, 5), (9, 3), (9, 1), (9, -1), (9, -3)\}$

43

The dimensions of a box are 2 feet by 3 feet by 18 inches. What is the volume of the box?

Use $V = lwh$.

- A 108 cubic feet
- B 90 cubic feet
- C 10.8 cubic feet
- D 9 cubic feet