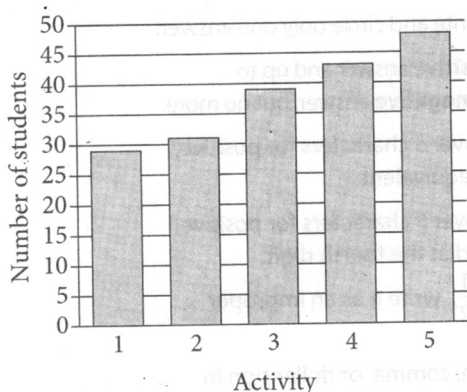


1

What is 10% of 470?

- A) 37
- B) 47
- C) 423
- D) 460

2



A group of students voted on five after-school activities. The bar graph shows the number of students who voted for each of the five activities. How many students chose activity 3?

- A) 25
- B) 39
- C) 48
- D) 50

3

$$4x + 5 = 165$$

What is the solution to the given equation?

4

A customer spent \$27 to purchase oranges at \$3 per pound. How many pounds of oranges did the customer purchase?

5

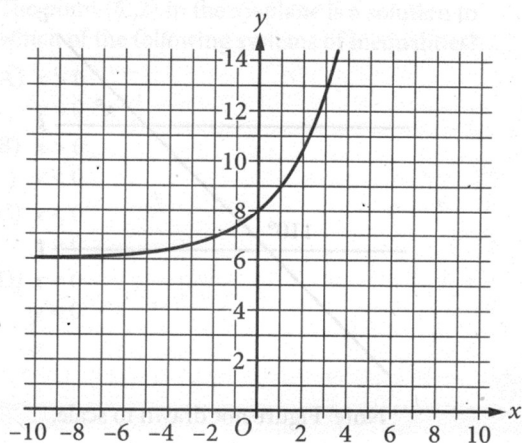
The function f is defined by $f(x) = 4x$. For what value of x does $f(x) = 8$?

6

The function g is defined by $g(x) = x^2 + 9$. For which value of x is $g(x) = 25$?

- A) 4
- B) 5
- C) 9
- D) 13

7



What is the y -intercept of the graph shown?

- A) $(-8, 0)$
- B) $(-6, 0)$
- C) $(0, 6)$
- D) $(0, 8)$

8

Sean rents a tent at a cost of \$11 per day plus a onetime insurance fee of \$10. Which equation represents the total cost c , in dollars, to rent the tent with insurance for d days?

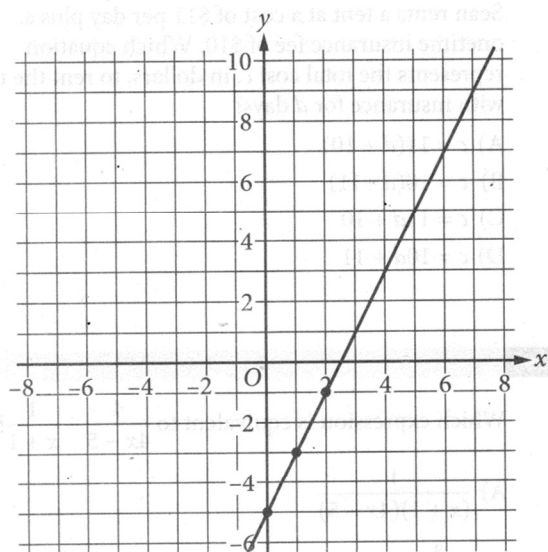
- A) $c = 11(d + 10)$
- B) $c = 10(d + 11)$
- C) $c = 11d + 10$
- D) $c = 10d + 11$

9

Which expression is equivalent to $\frac{4}{4x - 5} - \frac{1}{x + 1}$?

- A) $\frac{1}{(x + 1)(4x - 5)}$
- B) $\frac{3}{3x - 6}$
- C) $-\frac{1}{(x + 1)(4x - 5)}$
- D) $\frac{9}{(x + 1)(4x - 5)}$

10



The graph shows the linear relationship between x and y . Which table gives three values of x and their corresponding values of y for this relationship?

A)

x	y
0	0
1	-7
2	-9

B)

x	y
0	0
1	-3
2	-1

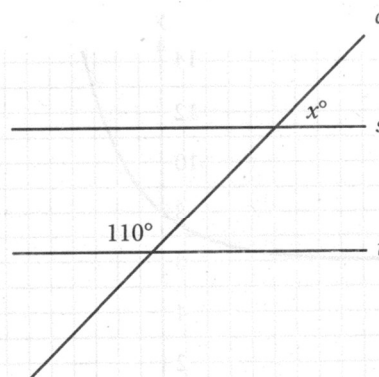
C)

x	y
0	-5
1	-7
2	-9

D)

x	y
0	-5
1	-3
2	-1

11



Note: Figure not drawn to scale.

In the figure shown, line c intersects parallel lines s and t . What is the value of x ?

12

What is the perimeter, in inches, of a rectangle with a length of 4 inches and a width of 9 inches?

- A) 13
B) 17
C) 22
D) 26

13

$$8j = k + 15m$$

The given equation relates the distinct positive numbers j , k , and m . Which equation correctly expresses j in terms of k and m ?

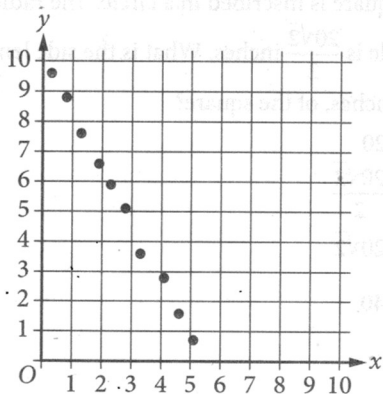
- A) $j = \frac{k}{8} + 15m$
B) $j = k + \frac{15m}{8}$
C) $j = 8(k + 15m)$
D) $j = \frac{k + 15m}{8}$

14

The point $(8, 2)$ in the xy -plane is a solution to which of the following systems of inequalities?

- A) $x > 0$
 $y > 0$
- B) $x > 0$
 $y < 0$
- C) $x < 0$
 $y > 0$
- D) $x < 0$
 $y < 0$

15



Which of the following equations is the most appropriate linear model for the data shown in the scatterplot?

- A) $y = -1.9x - 10.1$
- B) $y = -1.9x + 10.1$
- C) $y = 1.9x - 10.1$
- D) $y = 1.9x + 10.1$

16

A company opens an account with an initial balance of \$36,100.00. The account earns interest, and no additional deposits or withdrawals are made. The account balance is given by an exponential function A , where $A(t)$ is the account balance, in dollars, t years after the account is opened. The account balance after 13 years is \$68,071.93. Which equation could define A ?

- A) $A(t) = 36,100.00(1.05)^t$
- B) $A(t) = 31,971.93(1.05)^t$
- C) $A(t) = 31,971.93(0.05)^t$
- D) $A(t) = 36,100.00(0.05)^t$

17

$$2|4 - x| + 3|4 - x| = 25$$

What is the positive solution to the given equation?

18

The expression $90y^5 - 54y^4$ is equivalent to $ry^4(15y - 9)$, where r is a constant. What is the value of r ?

19

The area A , in square centimeters, of a rectangular cutting board can be represented by the expression $w(w + 9)$, where w is the width, in centimeters, of the cutting board. Which expression represents the length, in centimeters, of the cutting board?

- A) $w(w + 9)$
- B) w
- C) 9
- D) $(w + 9)$

20

$$y > 13x - 18$$

For which of the following tables are all the values of x and their corresponding values of y solutions to the given inequality?

A)

x	y
3	21
5	47
8	86

B)

x	y
3	26
5	42
8	86

C)

x	y
3	16
5	42
8	81

D)

x	y
3	26
5	52
8	91

21

Function f is defined by $f(x) = (x + 6)(x + 5)(x + 1)$. Function g is defined by $g(x) = f(x - 1)$. The graph of $y = g(x)$ in the xy -plane has x -intercepts at $(a, 0)$, $(b, 0)$, and $(c, 0)$, where a , b , and c are distinct constants. What is the value of $a + b + c$?

- A) -15
B) -9
C) 11
D) 15

22

A square is inscribed in a circle. The radius of the circle is $\frac{20\sqrt{2}}{2}$ inches. What is the side length, in inches, of the square?

- A) 20
B) $\frac{20\sqrt{2}}{2}$
C) $20\sqrt{2}$
D) 40

STOP

If you finish before time is called, you may check your work on this module only.
Do not turn to any other module in the test.