



1. Find the slope of the line passing through the points (1, -3) and (4, 6).

2. Find the slope of the line  $2y + 3x = 6$

3. Solve  $|x - 15| = 27$ .

4. Solve  $z + 6 = 18$ .

5. Solve  $-15k = -3$  and verify the answer.

6. Graph each of the following linear equations.

(i)  $x + y = 2$

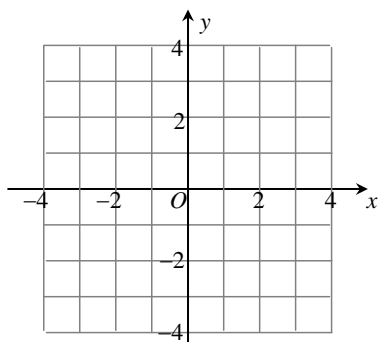
(ii)  $-x = -2y + 1$

7. Graph each of the following linear equations.

(i)  $4x = 24$

(ii)  $18 - 9x = 0$

8. Graph the line  $l$  whose y-intercept is (0, -1) and whose slope is 3.



9. Find the y-intercept of the line whose equation is  $y = 6x - 30$ .

10. Find the y-intercept of the line whose equation is  $y = 6x - 9$ .

11.  $100\% =$  \_\_\_\_\_.

12. Solve and graph:

(i)  $y - 1 \geq 3$

(ii)  $y + 1 \geq 3$

(iii)  $2 + y \geq 2$

13. Solve and graph:

(i)  $-10x \geq -5$

(ii)  $2x \geq -10$

(iii)  $2x \geq 5$

14. Apply the cross-multiplication property to solve  $\frac{5}{6} = \frac{10}{x}$ .

15. 5 out of every 11 children in a school are girls. What is the ratio of girls to boys in the school?

16. If  $\sqrt{a} = 4$ , which of the following is true?

- A.  $a = 2$
- B.  $a = 2$  or  $-2$
- C.  $a = 16$
- D.  $a = 16$  or  $-16$
- E.  $a = 8$

17. What is the value of  $\sqrt{64}$ ?

- A. 2
- B. 4
- C. 5
- D. 8
- E. 16



18. Which of the following gives the equation of the line passing through the points (0, 0) and (-2, -4)?

- A.  $y = 2x$
- B.  $y = -2x$
- C.  $x = 2y$
- D.  $x = -2y$
- E.  $x + y = 2$

19. Which of the following is true about lines  $l$  and  $m$  defined below?

$$l: 2x - 3y = 6$$

$$m: 2y + 3x = 6$$

- A. The two lines are parallel.
- B. The two lines are coincident.
- C. The two lines are intersecting.
- D. The two lines pass through the origin.
- E. The two lines are horizontal

20. Consider the function defined by the rule  $y = 3x - 2$  with domain  $\{0, 1, 2, 3\}$ . Which of the following is a complete listing of the ordered pairs of this function?

- A. (0, -2), (1, 1), (2, 4), (3, 7)
- B. (-2, 0), (1, 1), (4, 2), (7, 3)
- C. (0, 1), (1, 2), (2, 3), (3, 4)
- D. (0, 2), (1, -1), (2, -4), (3, -7)
- E. (0, 0), (1, 1), (2, 4), (3, 6)

21.  $\sqrt{x^2}$  is

- A.  $x$
- B.  $x$  or  $-x$
- C.  $|x|$
- D.  $|x|$  or  $-|x|$
- E. nonexistent

22. The table below defines a function.

$x$	$y$
0	2
2	4
4	6
6	8

Which of the following is the rule of this function?

- A.  $y = 2x$
- B.  $y = x + 1$
- C.  $y = x + 2$
- D.  $y = 2x + 2$
- E.  $y = 3x + 2$

23. Which of the following is equal to  $(-5)^4$ ?

- A. -20
- B. 20
- C. -625
- D. 625
- E. -1

24. Evaluate  $4^7 \times 4^{-10}$ .

- A. -12
- B.  $\frac{1}{64}$
- C.  $\frac{1}{12}$
- D. 128
- E.  $\frac{1}{16}$

25. Evaluate  $\frac{10^{-3}}{10^{-5}}$ .

- A.  $\frac{1}{20}$
- B.  $\frac{1}{100}$
- C. 20
- D. 100
- E. 200



26. Evaluate  $(2^{-3})^{-2}$ .

A. 16

B. 32

C. 64

D.  $\frac{1}{32}$

E.  $\frac{1}{64}$

27. Which of the following is equal to  $4.82 \times 10^4$ ?

A. 48,200

B. 482,000

C. 4,820

D. 1,928

E. 482

**Solution:**

1. Find the slope of the line passing through the points (1, -3) and (4, 6).

**Answer :**  $Slope = \frac{6 - (-3)}{4 - 1} = \frac{9}{3} = 3$

2. **Answer:**

$$2y + 3x = 6$$

$$2y = -3x + 6$$

$$y = -\frac{3}{2}x + 3$$

$$\text{slope} = -\frac{3}{2}$$

3. Solve  $|x - 15| = 27$ .

**Answer:**

$$x - 15 = 27 \text{ then } x = 15 + 27 = 42$$

or

$$x - 15 = -27 \text{ then } x = -27 + 15 = -12$$

4. Solve  $z + 6 = 18$ .

**Answer:**

$$z = 18 - 6 = 12$$

5. Solve  $-15k = -3$  and verify the answer.

**Answer:**

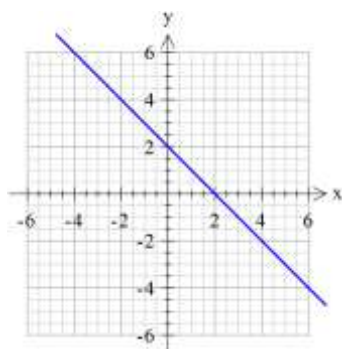
$$-15k = -3$$

$$k = \frac{-3}{-15} = \frac{1}{5}$$

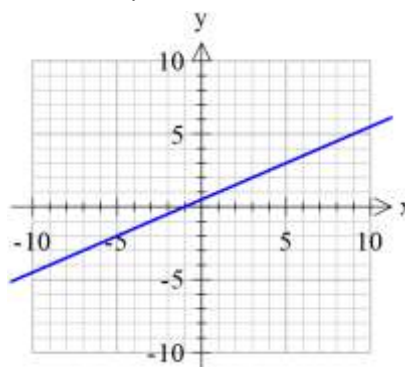
6. Graph each of the following linear equations.

(i)  $x + y = 2$

**Answer :**



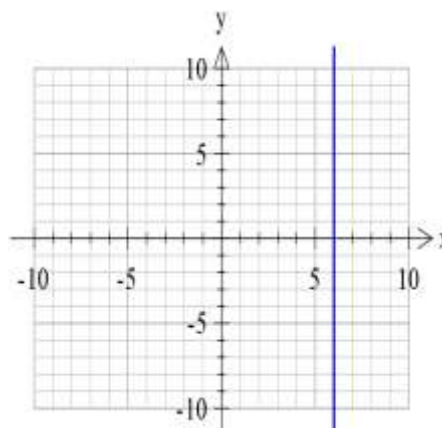
(ii)  $-x = -2y + 1$



7. Graph each of the following linear equations.

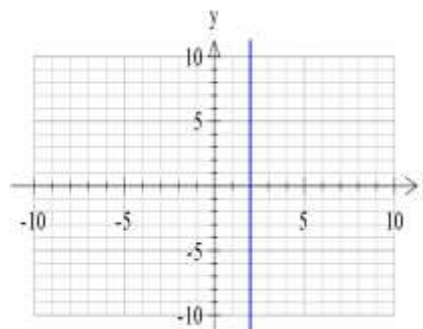
(i)  $4x = 24$

**Answer:**



(ii)  $18 - 9x = 0$

**Answer:**





8. Graph the line  $l$  whose  $y$ -intercept is  $(0, -1)$  and whose slope is 3.

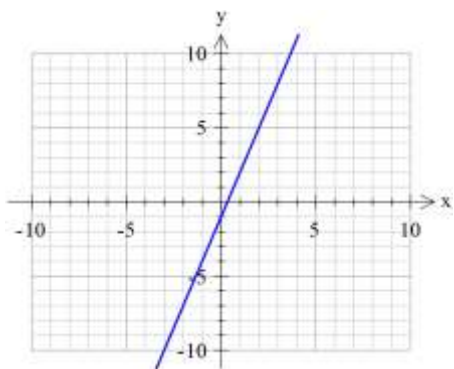
**Answer:**

To plot The Line  $l$  we need to plot two points:  
first point is given  $(0, -1)$

To find the Second Point use the slope  $m =$

$$3 = \frac{3}{1} = \frac{y}{x}$$

and add to 0 the value  $x=1$  and to  $-1$  the value  $y=3$  so the second point will be  $(0+1, -1+3)=(1, 2)$



9. Find the  $y$ -intercept of the line whose equation is  $y = 6x - 30$ .

**Answer:**

Y-Intercept:  $x=0$

$$\text{then } y=6(0)-30=-30$$

Y-Intercept:  $(0, -30)$

10. Find the  $y$ -intercept of the line whose equation is  $y = 6x - 9$ .

**Answer:**

Y-Intercept:  $x=0$

$$\text{then } y=6(0)-9=-9$$

Y-Intercept:  $(0, -9)$

11.  $100\% =$  \_\_\_\_\_.

**Answer:**

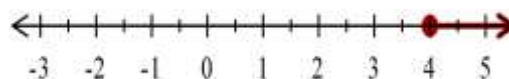
$$100\% = \frac{100}{100} = 1$$

12. Solve and graph:

(i)  $y - 1 \geq 3$

**Answer:**

$$y \geq 3+1=4$$

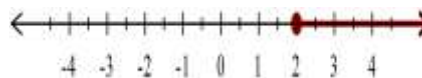


(ii)  $y + 1 \geq 3$

**Answer:**

$$y \geq 3-1=2$$

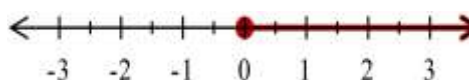
$$y \geq 2$$



(iii)  $2 + y \geq 2$

**Answer:**

$$2 + y \geq 2$$



13. Solve and graph:

(i)  $-10x \geq -5$

**Answer:**

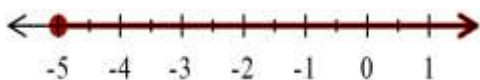
$$x \leq \frac{1}{2}$$



(ii)  $2x \geq -10$

**Answer:**

$$x \geq -5$$

(iii)  $2x \geq 5$ **Answer:**

$$x \geq \frac{5}{2}$$

**14.** Apply the cross-multiplication property to

solve  $\frac{5}{6} = \frac{10}{x}$ .

**Answer:**

$$5x = 60$$

$$x = 12$$

**15.** 5 out of every 11 children in a school are girls. What is the ratio of girls to boys in the school?**Answer:**

number of Girls =  $G = 5$

Number of boys =  $B = 11 - 5 = 6$

$$\frac{G}{B} = \frac{5}{6}$$

**16.** If  $\sqrt{a} = 4$ , which of the following is true?**Answer:**

A.  $a = 2$

B.  $a = 2$  or  $-2$

**C.  $a = 16$**

D.  $a = 16$  or  $-16$

E.  $a = 8$

**Note:** Square both sides**17.** What is the value of  $\sqrt{64}$ ?**Answer:**

A. 2

B. 4

C. 5

**D. 8**

E. 16

Note:  $\sqrt{64} = \sqrt{8 \times 8} = 8$

**18.** Which of the following gives the equation of the line passing through the points (0, 0)

and

(-2, -4)?

**Answer:**

A.  $y = 2x$

B.  $y = -2x$

C.  $x = 2y$

D.  $x = -2y$

E.  $x + y = 2$

Line passing the origin (0,0) is of the form  $y = mx$ 

where  $m = \frac{-4 - 0}{-2 - 0} = 2$

∴  $y = 2x$

**19.** Which of the following is true about lines  $l$  and  $m$  defined below?

$l: 2x - 3y = 6$

$m: 2y + 3x = 6$

**Answer:****C. The two lines are intersecting.**

$l: -3y = -2x + 6$  then  $y = \frac{2}{3}x - 2$  then slope

$m_1 = \frac{2}{3}$  and y-Intercept  $b_1 = -2$

$m: 2y = -3x + 6$  then  $y = \frac{-3}{2}x + 3$  then slope

$m_2 = \frac{-3}{2}$  and y-Intercept  $b_1 = 3$

since  $m_1 \neq m_2$  then the two lines are Intersecting**20.** Consider the function defined by the rule  $y = 3x - 2$  with domain  $\{0, 1, 2, 3\}$ . Which of



the following is a complete listing of the ordered pairs of this function?

A. (0, -2), (1, 1), (2, 4), (3, 7)

Answer:

$$x=0 \text{ then } y=3(0)-2=-2 ;(0,-2)$$

$$x=1 \text{ then } y=3(1)-2=1 ;(1,1)$$

$$x=2 \text{ then } y=3(2)-2=4 ;(2,4)$$

$$x=3 \text{ then } y=3(3)-2=7 ;(3,7)$$

21.  $\sqrt{x^2}$  is

Answer:

A.  $x$

B.  $x$  or  $-x$

C.  $|x|$

D.  $|x|$  or  $-|x|$

E. nonexistent

22. The table below defines a function.

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D.  $y = 2x + 2$

E.  $y = 3x + 2$

23. Which of the following is equal to  $(-5)^4$ ?

B. -20

B. 20

C. -625

D. 625

E. -1

Answer:

$$(-5) \cdot (-5) \cdot (-5) \cdot (-5) = 625$$

24. Evaluate  $4^7 \times 4^{-10}$ .

Answer:

(B)  $\frac{1}{64}$

$$\text{since } 4^7 \times 4^{-10} = 4^{-3} = \frac{1}{4^3} = \frac{1}{64}$$

25. Evaluate  $\frac{10^{-3}}{10^{-5}}$ .

Answer: (D) 100

$$\frac{10^{-3}}{10^{-5}} = 10^{-3+5} = 10^2 = 100$$

26. Evaluate  $(2^{-3})^{-2}$ .

Answer: (C) 64

$$(2^{-3})^{-2} = 2^{-3 \times -2} = 2^6 = 64$$

27. Which of the following is equal to  $4.82 \times 10^4$ ?

A. 48,200

Note: Move point to the right 4 digits