

1.1

Coordinate plane, Distance and Midpoint

- 1) If (m, n) is the **midpoint** of the line joining the x -intercept and y -intercept of the graph of $y = -\sqrt{x+1}$, then $m + n =$

- A) -1
- B) 0
- C) $-\frac{1}{2}$
- D) $-\frac{1}{4}$
- E) $\frac{1}{2}$

- 2) If $y < x$, then the distance between the points $(\sqrt{3}x, y)$ and $(\sqrt{3}y, x)$ is equal to

- A) $2(x - y)$
- B) $2(y - x)$
- C) $3(y - x)$
- D) $3(x - y)$
- E) $4(y - x)$

- 3) If $(-2, 11)$ is the midpoint of the line segment joining the endpoints (a, b) and $(4, -6)$, then $a + b =$

- A) 20
- B) 16
- C) 15
- D) 18
- E) 21

4) If $x < 0$, then the distance between the points $(2x, -x)$ and $(6x, 2x)$, is

A) $-5x$

B) $5x$

C) $-7x$

D) $7x$

E) $-6x$

5) If $M(14, 11)$ is the midpoint of the line segment joining the points $A(x, 14)$ and $B(10, y)$, then the **distance** between the points A and B is

A) 10

B) 14

C) 100

D) 5

E) 25

6) If the point $(x, -2)$, $x > 0$, is 5 units from the points $(0, -5)$, then $3x - 1 =$

A) 11

B) 14

C) 8

D) 5

E) 20

7) If $b > a$, then the distance between the points $(3a, -4b)$ and $(3b, -4a)$, is equal to

(A) $5(b - a)$

(B) $4(b + a)$

(C) $3(b - a)$

(D) $2(a - b)$

(E) $b - a$

8) The sum of the values of x such that the distance between $(x, -9)$ and $(3, -5)$ is equal to 6 is

(a) 6

(b) -6

(c) $-4\sqrt{5}$

(d) -6

(e) 6

9) If $x < 0$, then the distance between the points $(4x, 3x)$ and $(-8x, -2x)$ is equal to

(a) $-13x$

(b) $13x$

(c) $12x$

(d) $5x$

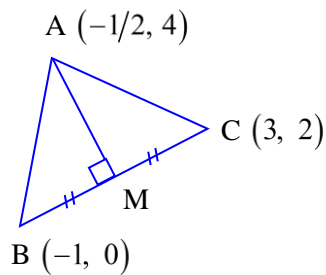
(e) $-5x$

10) If the distance between the points $(-x-2y, y-4x)$ and $(-x, 5y-4x)$, where $y > 0$, is $\sqrt{5}$, then $y =$

- (a) $1/2$
- (b) $3/2$
- (c) $1/5$
- (d) $3/4$
- (e) $\sqrt{3}/2$

11) In the adjacent figure, if $d(B, M) = d(M, C)$ then the height of the triangle (*length of AM*) is equal to

- (a) $3\sqrt{5}/2$
- (b) $3/2$
- (c) $2\sqrt{3}/5$
- (d) $2\sqrt{5}/3$
- (e) $9/2$



12) If $(-1, 3)$ is the midpoint of the line segment joining the points $(a+2, -3)$ and $(1, b+2)$, then the length of the line segment is

- (a) $4\sqrt{10}$
- (b) $6\sqrt{2}$
- (c) 6
- (d) $5\sqrt{2}$
- (e) $6\sqrt{10}$

13) The sum of the values of x such that the distance between $(x, -9)$ and $(3, -5)$ is equal to 6 is

- (a) 6
- (b) -6
- (c) $-4\sqrt{5}$
- (d) -6
- (e) 6

14) If $x < 0$, then the distance between the points $(4x, 3x)$ and $(-8x, -2x)$ is equal to

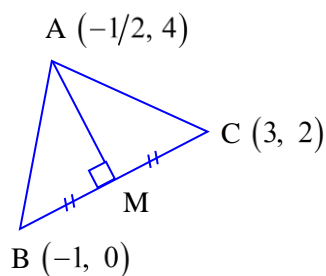
- (f) $-13x$
- (g) $13x$
- (h) $12x$
- (i) $5x$
- (j) $-5x$

15) If the distance between the points $(-x-2y, y-4x)$ and $(-x, 5y-4x)$, where $y > 0$, is $\sqrt{5}$, then $y =$

- (f) $1/2$
- (g) $3/2$
- (h) $1/5$
- (i) $3/4$
- (j) $\sqrt{3}/2$

16) In the adjacent figure, if $d(B, M) = d(M, C)$ then the height of the triangle (*length of AM*) is equal to

- (f) $3\sqrt{5}/2$
- (g) $3/2$
- (h) $2\sqrt{3}/5$
- (i) $2\sqrt{5}/3$



17) If $(-1, 3)$ is the midpoint of the line segment joining the points $(a+2, -3)$ and $(1, b+2)$, then the length of the line segment is

- (f) $4\sqrt{10}$
- (g) $6\sqrt{2}$
- (h) 6
- (i) $5\sqrt{2}$
- (j) $6\sqrt{10}$

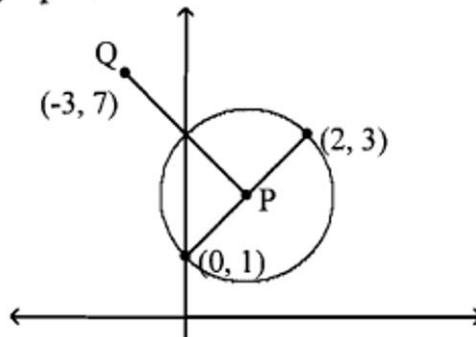
18) If $(7/4, 11/4)$ is the midpoint of a line segment with endpoints (x, y) and $(-1/2, 5/3)$, then $x =$

- (a) 4
- (b) -4
- (c) $9/4$
- (d) $-9/4$
- (e) $-5/8$

19) If the point (a, b) is in the second quadrant, then the point $(-a, -b)$ is in the

- (A) fourth quadrant

20) From the adjacent graph, the distance between P and Q equals :



- (A) $\sqrt{41}$

21) If $(x, -2)$ is the midpoint of the line segment joining $(-6, y)$ and $(22, -16)$, then $x + y =$

A) 20

22) If the points (x, y) and $(-9, 9)$ are the end points of a line segment and the point $(-7, 6)$ is the midpoint, then $3x + 5y =$

A) 0

23) The x -intercept and the y -intercept of the graph of $x = \sqrt{y-1}$ are:

A) no x -intercept and y -intercept is 1.

24) If $x < 0$, then the distance between the points $(3x, -3x)$ and $(-x, -6x)$

A) $-5x$

25) If the distance between the points $(x, 2)$ and $(2, -1)$ is 5 then all possible values of x are:

A) $-2; 6$

26) If $(x, 2)$ is the midpoint of the line segment joining $(6, y)$ and $(4, 6)$ then $x + y$ is equal to:

B) 3