

# Distance

NTI: Day # 4(a)

B.

**Question 1 .**

The distance between the points  $(3, y_1)$  and  $(11, 12)$  is 17. What is a possible value of  $y_1$ ?

- A. 3
- B. -1
- C. -2
- D. -3

**Question 2 .**

What is the distance between  $(-4, 3)$  and  $(-5, 5)$ ?

- A. 1
- B.  $\sqrt{3}$
- C.  $\sqrt{5}$
- D. 3

**Question 3 .**

The distance between the points  $(5, y_1)$  and  $(12, 10)$  is 25. What is a possible value of  $y_1$ ?

- A. 14
- B. -13
- C. -14
- D. -12

**Question 4 .**

Let AB be the directed line segment beginning at point  $A(1, 5)$  and ending at point  $B(-5, -10)$ . Find the point P on the line segment that partitions the line segment into the segments AP and PB at a ratio of 5:3.

- A.  $\left(-2\frac{3}{4}, -4\frac{3}{8}\right)$
- B.  $\left(-4\frac{2}{5}, -11\frac{2}{3}\right)$
- C.  $\left(-1\frac{1}{4}, -\frac{5}{8}\right)$
- D.  $\left(-1\frac{3}{4}, \frac{5}{8}\right)$

## Question 5 .

What is the distance between the points  $(-2,-4)$  and  $(4,4)$ ?

- A. 14
- B. 2
- C. -3
- D. 10

## Question 6 .

Which of the following is the closest approximation of the perimeter of triangle PQR given  $P(2,8)$ ,  $Q(-5,-1)$ , and  $R(8,16)$ ?

- A. 26.23
- B. 28
- C. 44.41
- D. 42.8

## Question 7 .

Let AB be the directed line segment beginning at point  $A(5,2)$  and ending at point  $B(-5,11)$ . Find the point P on the line segment that partitions the line segment into the segments AP and PB at a ratio of 3:4.

- A.  $(1\frac{2}{3}, 10\frac{1}{4})$
- B.  $(\frac{5}{7}, 5\frac{6}{7})$
- C.  $(5\frac{5}{7}, 7\frac{6}{7})$
- D.  $(-\frac{5}{7}, 7\frac{1}{7})$

## Question 8 .

The distance between the points  $(1,y_1)$  and  $(4,1)$  is 5. What is a possible value of  $y_1$ ?

- A. -3
- B. -2
- C. 3
- D. -1

## Question 9 .

What is the distance between the points  $(-2,-5)$  and  $(1,-1)$ ?

- A. 1
- B. 7
- C. 5
- D. -7

## Question 10 .

Which of the following is the closest approximation of the perimeter of triangle PQR given  $P(4,8)$ ,  $Q(-3,4)$ , and  $R(10,16)$ ?

- A. 35.75
- B. 36.99
- C. 39
- D. 21.86



# Midpoints

NTI: Day #4 (b)

B

**Question 1 .**

Determine the midpoint between the points  $(-1, 4)$  and  $(3, 8)$ .

- A.  $(5, 6)$
- B.  $(4, 4)$
- C.  $(2, 12)$
- D.  $(1, 6)$

**Question 2 .**

Determine the midpoint between the points  $(-7, 8)$  and  $(1, 8)$ .

- A.  $(8, 0)$
- B.  $(-3, 8)$
- C.  $(5, 8)$
- D.  $(-6, 16)$

**Question 3 .**

A line segment has endpoints at  $(-3, -2)$  and  $(x_2, y_2)$ . The midpoint of the line segment is  $(0, -6)$ . What are the values of  $(x_2, y_2)$ ?

- A.  $x_2 = -1.5, y_2 = -4$
- B.  $x_2 = -6, y_2 = 2$
- C.  $x_2 = 3, y_2 = -10$
- D.  $x_2 = 0, y_2 = -6$

**Question 4 .**

$(1, 1)$  is the midpoint between  $(-1, 2)$  and  $(x_2, y_2)$ . Find  $(x_2, y_2)$ .

- A.  $(2, 2)$
- B.  $(-2, 1)$
- C.  $(0, 3)$
- D.  $(3, 0)$

**Question 5 .**

Determine the midpoint between the points  $(13, -11)$  and  $(21, -13)$ .

- A.  $(8, -2)$
- B.  $(6, -12)$
- C.  $(34, -24)$
- D.  $(17, -12)$

## Question 6 .

$(-2, -2)$  is the midpoint between  $(-3, 1)$  and  $(x_2, y_2)$ . Find  $(x_2, y_2)$ .

- A.  $(-1, -5)$
- B.  $(-5, -1)$
- C.  $(-1, 3)$
- D.  $(-4, -4)$

## Question 7 .

The point  $(21, 15)$  is the midpoint of a line segment with endpoints at  $(15, 16)$  and  $(x_2, y_2)$ . What is the second endpoint,  $(x_2, y_2)$ ?

- A.  $(9, 17)$
- B.  $(3, 18)$
- C.  $(27, 14)$
- D.  $(18, 15.5)$

## Question 8 .

$(-2, -5)$  is the midpoint between  $(-3, -2)$  and  $(x_2, y_2)$ . Find  $(x_2, y_2)$ .

- A.  $(-1, -8)$
- B.  $(-5, -7)$
- C.  $(-4, -10)$
- D.  $(-1, 3)$

## Question 9 .

A line segment has endpoints at  $(2, -3)$  and  $(x_2, y_2)$ . The midpoint of the line segment is  $(6, -6)$ . What are the values of  $(x_2, y_2)$ ?

- A.  $x_2 = 6, y_2 = -6$
- B.  $x_2 = 4, y_2 = -4.5$
- C.  $x_2 = 10, y_2 = -9$
- D.  $x_2 = -2, y_2 = 0$

**Question 10 .**

The number of inmates in state and federal prison from year to year can be approximated over a relatively short time span by a linear model.

In 1980 there were 329,821 inmates in state and federal prisons and in 1986 there were 544,973. Estimate the number of inmates in 1983.

- A. 291,598
- B. 437,397
- C. 491,185
- D. 436,885

