



# Distance Formula

Name \_\_\_\_\_

Score \_\_\_\_\_

DF:07

Example : Find the value of  $k$ , if the distance between the points  $(-9, k)$  and  $(2, 3)$  is 11 units.

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

$$11 = \sqrt{(2 + 9)^2 + (3 - k)^2}$$

$$121 = 11^2 + (3 - k)^2 \Rightarrow 0 = (3 - k)^2 \Rightarrow 0 = 3 - k$$

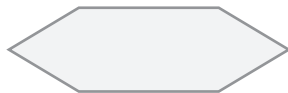
$$\mathbf{k = 3}$$

Find the value of unknown variables from the given endpoints and the distance between them.

1)  $(m, -3)$  and  $(1, 0)$

distance = 5 units

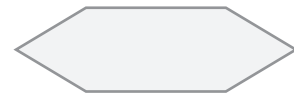
$m =$



2)  $(5, -2)$  and  $(5, b)$

distance = 8 units

$b =$



3)  $(-3, u)$  and  $(10, -5)$

distance = 13 units

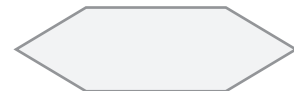
$u =$



4)  $(1, 2)$  and  $(p, 8)$

distance = 10 units

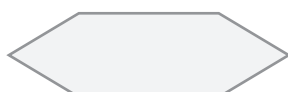
$p =$



5)  $(-6, 7)$  and  $(h, -9)$

distance = 16 units

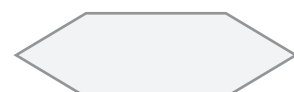
$h =$



6)  $(n, -2)$  and  $(-3, -2)$

distance = 3 units

$n =$





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## Answer key

DF:07

Example : Find the value of  $k$ , if the distance between the points  $(-9, k)$  and  $(2, 3)$  is 11 units.

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

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$$121 = 11^2 + (3 - k)^2 \Rightarrow 0 = (3 - k)^2 \Rightarrow 0 = 3 - k$$

$$\mathbf{k = 3}$$

Find the value of unknown variables from the given endpoints and the distance between them.

1)  $(m, -3)$  and  $(1, 0)$

distance = 5 units

$m =$

**-3 or 5**

2)  $(5, -2)$  and  $(5, b)$

distance = 8 units

$b =$

**-10 or 6**

3)  $(-3, u)$  and  $(10, -5)$

distance = 13 units

$u =$

**-5**

4)  $(1, 2)$  and  $(p, 8)$

distance = 10 units

$p =$

**-7 or 9**

5)  $(-6, 7)$  and  $(h, -9)$

distance = 16 units

$h =$

**-6**

6)  $(n, -2)$  and  $(-3, -2)$

distance = 3 units

$n =$

**-6 or 0**