

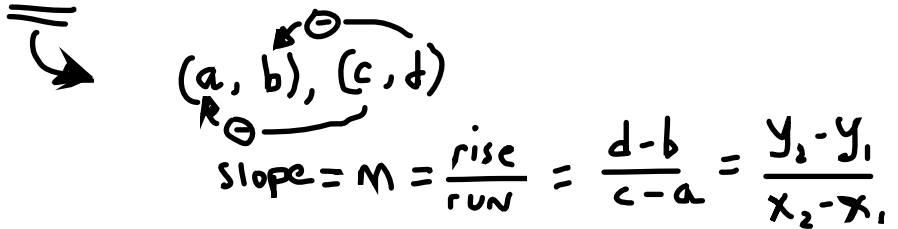
STANDARD IV: The student will be able to apply formulas.

OBJECTIVE

2. Find the distance, midpoint, or slope of line segments when given two points.

ELIGIBLE CONTENT

- Radicals may be used.
- Radicals will be simplified.
- Lines graphed on the coordinate plane may be included.
- Determining the slope of a line given a line on the coordinate plane with two points labeled with their ordered pairs may be required.
- Determining the slope of a line or midpoint of a line segment given two points on a line on the coordinate plane without any coordinates labeled may be required.
- The formulas will be given in the problems.



SAMPLE ITEMS

1 The endpoints of \overline{AB} are $(2, 5)$ and $(-6, 9)$. What are the coordinates of the midpoint of \overline{AB} ?

Midpoint formula: $M = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$

- A** $(-4, 2)$
- B** $(-2, 7)$
- C** $(4, 7)$
- D** $(7, -2)$

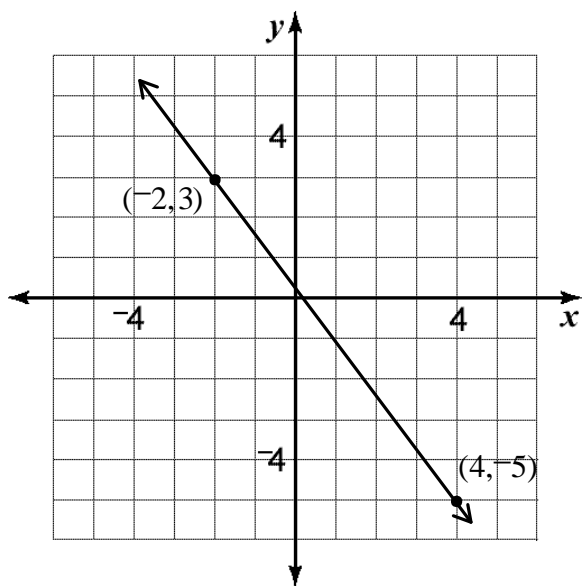
2 What is the distance between $(4, -2)$ and $(4, -8)$?

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

- A** $\sqrt{6}$
- B** $2\sqrt{5}$
- C** 6
- D** 10

- 3** What is the slope of the line shown in the graph?

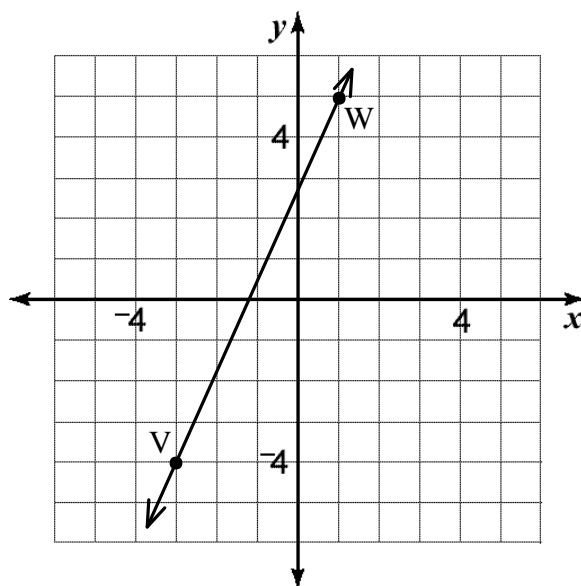
Slope formula: $m = \frac{y_2 - y_1}{x_2 - x_1}$



- A -4
- B -1
- C $-\frac{4}{3}$
- D $-\frac{1}{3}$

- 4** What is the midpoint of segment VW shown in the graph?

Midpoint formula: $M = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$



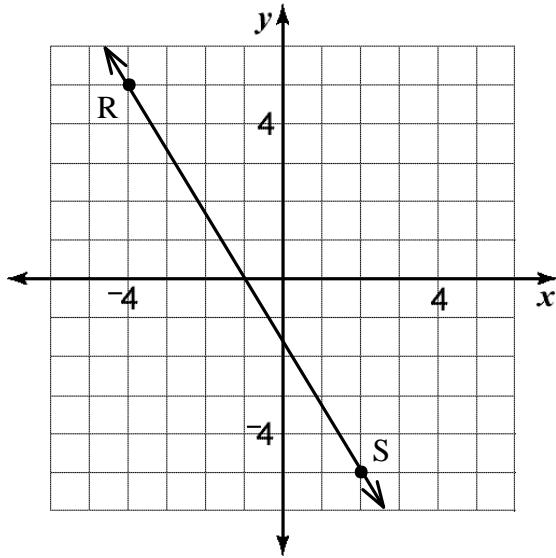
- A $\left(-\frac{7}{3}, 3\right)$
- B $\left(-1, \frac{1}{2}\right)$
- C $\left(\frac{1}{2}, -1\right)$
- D $\left(3, -\frac{7}{2}\right)$

5

What is the length of segment RS shown in the graph below?

Distance formula:

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



- A $2\sqrt{26}$
- B $2\sqrt{34}$
- C 11
- D 12