

G.G.67: Distance 2: Find the length of a line segment, given its endpoints

- 1 A line segment has endpoints $(4, 7)$ and $(1, 11)$.
What is the length of the segment?
- 2 What is the length of a line segment whose endpoints have coordinates $(5, 3)$ and $(1, 6)$?
- 3 What is the length of the line segment whose endpoints are $(1, -4)$ and $(9, 2)$?
- 4 What is the length, to the *nearest tenth*, of the line segment joining the points $(-4, 2)$ and $(146, 52)$?
- 5 What is the length of \overline{RS} with $R(-2, 3)$ and $S(4, 5)$?
- 6 What is the length of the line segment whose endpoints are $A(-1, 9)$ and $B(7, 4)$?
- 7 What is the length of \overleftrightarrow{AB} with endpoints $A(-1, 0)$ and $B(4, -3)$?
- 8 What is the length of the line segment with endpoints $(-6, 4)$ and $(2, -5)$?
- 9 What is the distance between the points $(-3, 2)$ and $(1, 0)$?
- 10 In circle O , a diameter has endpoints $(-5, 4)$ and $(3, -6)$. What is the length of the diameter?
- 11 If the endpoints of \overline{AB} are $A(-4, 5)$ and $B(2, -5)$, what is the length of \overline{AB} ?
- 12 The endpoints of \overline{PQ} are $P(-3, 1)$ and $Q(4, 25)$.
Find the length of \overline{PQ} .
- 13 The coordinates of the endpoints of \overline{FG} are $(-4, 3)$ and $(2, 5)$. Find the length of \overline{FG} in simplest radical form.
- 14 Find, in simplest radical form, the length of the line segment with endpoints whose coordinates are $(-1, 4)$ and $(3, -2)$.
- 15 The endpoints of \overline{AB} are $A(3, -4)$ and $B(7, 2)$.
Determine and state the length of \overline{AB} in simplest radical form.
- 16 The coordinates of the endpoints of \overline{CD} are $C(3, 8)$ and $D(6, -1)$. Find the length of \overline{CD} in simplest radical form.
- 17 Line segment AB has endpoint A located at the origin. Line segment AB is longest when the coordinates of B are
 - 1) $(3, 7)$
 - 2) $(2, -8)$
 - 3) $(-6, 4)$
 - 4) $(-5, -5)$

G.G.67: Distance 2: Find the length of a line segment, given its endpoints**Answer Section**

1 ANS:

5

$$d = \sqrt{(4-1)^2 + (7-11)^2} = \sqrt{9+16} = \sqrt{25} = 5$$

REF: 011205ge

2 ANS:

5

$$d = \sqrt{(5-1)^2 + (3-6)^2} = \sqrt{16+9} = \sqrt{25} = 5$$

REF: 011507ge

3 ANS:

10

$$d = \sqrt{(1-9)^2 + (-4-2)^2} = \sqrt{64+36} = \sqrt{100} = 10$$

REF: 081107ge

4 ANS:

158.1

$$d = \sqrt{(146-(-4))^2 + (52-2)^2} = \sqrt{25,000} \approx 158.1$$

REF: 061021ge

5 ANS:

 $2\sqrt{10}$

$$d = \sqrt{(-2-4)^2 + (3-5)^2} = \sqrt{36+4} = \sqrt{40} = 2\sqrt{10}$$

REF: 061411ge

6 ANS:

 $\sqrt{89}$

$$d = \sqrt{(-1-7)^2 + (9-4)^2} = \sqrt{64+25} = \sqrt{89}$$

REF: 061109ge

7 ANS:

 $\sqrt{34}$

$$d = \sqrt{(-1-4)^2 + (0-(-3))^2} = \sqrt{25+9} = \sqrt{34}$$

REF: 061217ge

8 ANS:

 $\sqrt{145}$

$$d = \sqrt{(-6-2)^2 + (4-(-5))^2} = \sqrt{64+81} = \sqrt{145}$$

REF: 081013ge

9 ANS:

$$2\sqrt{5}$$

$$d = \sqrt{(-3-1)^2 + (2-0)^2} = \sqrt{16+4} = \sqrt{20} = \sqrt{4} \cdot \sqrt{5} = 2\sqrt{5}$$

REF: 011017ge

10 ANS:

$$2\sqrt{41}$$

$$d = \sqrt{(-5-3)^2 + (4-(-6))^2} = \sqrt{64+100} = \sqrt{164} = \sqrt{4} \sqrt{41} = 2\sqrt{41}$$

REF: 011121ge

11 ANS:

$$2\sqrt{34}$$

$$d = \sqrt{(-4-2)^2 + (5-(-5))^2} = \sqrt{36+100} = \sqrt{136} = \sqrt{4} \cdot \sqrt{34} = 2\sqrt{34}.$$

REF: 080919ge

12 ANS:

$$25. d = \sqrt{(-3-4)^2 + (1-25)^2} = \sqrt{49+576} = \sqrt{625} = 25.$$

REF: fall0831ge

13 ANS:

$$\sqrt{(-4-2)^2 + (3-5)^2} = \sqrt{36+4} = \sqrt{40} = \sqrt{4} \sqrt{10} = 2\sqrt{10}.$$

REF: 081232ge

14 ANS:

$$\sqrt{(-1-3)^2 + (4-(-2))^2} = \sqrt{16+36} = \sqrt{52} = \sqrt{4} \sqrt{13} = 2\sqrt{13}$$

REF: 081331ge

15 ANS:

$$\sqrt{(3-7)^2 + (-4-2)^2} = \sqrt{16+36} = \sqrt{52} = \sqrt{4} \sqrt{13} = 2\sqrt{13}.$$

REF: 011431ge

16 ANS:

$$\sqrt{(6-3)^2 + (-1-8)^2} = \sqrt{9+81} = \sqrt{90} = \sqrt{9} \sqrt{10} = 3\sqrt{10}.$$

REF: 061533ge

17 ANS: 2

REF: 081415ge