Geometry H **Name : _____**
Section 1.3 Midpoint Formula Homework **Date : _____ Period : ___**

Find the indicated length.

1. Line *JK* bisects $\overline{LM}$ at point *J*. Find *JM* if *LJ* = 23 centimeters.

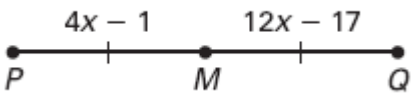
2. Line *WX* bisects $\overline{YZ}$ at point *W*. Find *YZ* if *WZ* = $9\frac{5}{8}$ inches.

3. Point *F* bisects $\overline{GH}$. Find *GH* if *GF* = $14\frac{7}{12}$ feet.

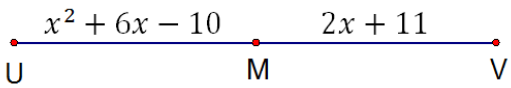
4. Point *R* bisects $\overline{ST}$. Find *RT* if *ST* = 16.9 meters.

In the diagram, *M* is the midpoint of the segment. Find the indicated length.

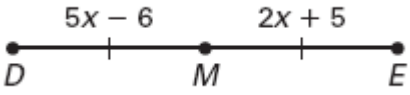
5. Find *MQ*.



6. Find UV



7. Find DE



Find the coordinates of the midpoint of the segment with the given endpoints.

8. $A(6, -3)$ and $B(10, 5)$

9. $M(14, 7)$ and $N(-9, 1)$

10. $Y(-13, 8)$ and $Z(2, -10)$

11. $C(-5, -17)$ and $D(-18, 12)$

Use the given endpoint *R* and midpoint *M* of $\overline{RS}$ to find the coordinates of the other endpoint *S*.

12. $R(8, 0)$, $M(4, -5)$

13. $R(7, -17)$, $M(-2, 3)$

14. $R(-6, -9)$, $M(8, -5.5)$

15. $R(11, -16)$, $M(-3.5, -9.5)$

Answer Key

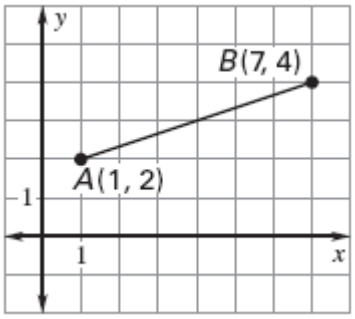
1) 23 cm	2) 19 ¼ in	3) $29\frac{1}{6}$ ft	4) 8.45 m	5) 7
6) 34	7) $24\frac{2}{3}$	8) (8, 1)	9) (2.5, 4)	10) (-5.5, -1)
11) (-11.5, -2.5)	12) (0, -10)	13) (-11, 23)	14) (22, -2)	15) (-18, -3)

Geometry H **Name : _____**

Section 1.3 Distance Formula Homework **Date : _____ Period : ___**

Find the length of the segment. Leave answers in simplest radical form.

1.



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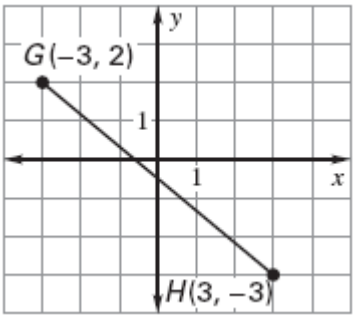
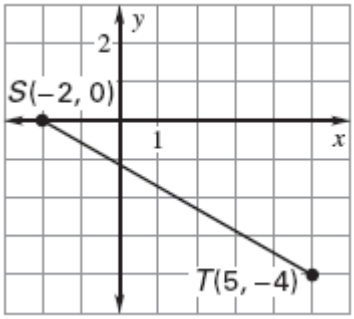
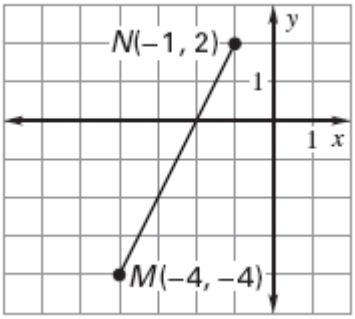


3.



4.



Find the length of the segment. Then find the coordinate of the midpoint of the segment.

5.

6.

The endpoints of two segments are given. Find each segment length. Tell whether the segments are congruent. Leave answers in simplest radical form.

7. $\overline{AB}$: A (7, 2), B(0, -3)

$\overline{CD}$: C(–4, 12),D(-l, 4)

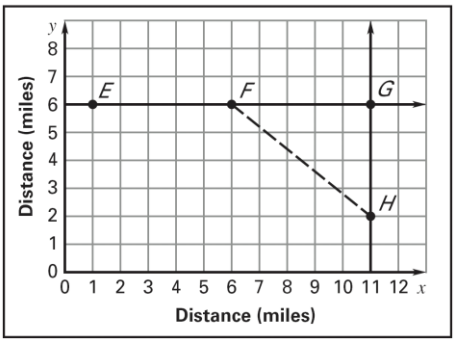
8. $\overline{RS}$: R(5, 6), S(11, –2)

$\overline{TU}$: T(–7, 9), U(3, 9)

9. $\overline{KL}$: K(–10, 8), L(2, 7)

$\overline{MN}$: M(14, –4), N(5, 4)

10. The diagram shows existing roads ($\overline{EG}$) and ($\overline{GH}$) and a proposed road ($\overline{FH}$) being considered.



a. If you drive from point E to point H on existing roads, how far do you travel?

b. If you were to use the proposed road as you drive from E to H, about how far do you travel? Round to the nearest tenth of a mile.

c. About how much shorter is the trip if you were to use the proposed road?

Answer Key

1) $2\sqrt{10}$ 2) $\sqrt{61}$ 3) $\sqrt{65}$ 4) $3\sqrt{5}$ 5) 16; -6

6) 45; -7.5 7) AB = $\sqrt{74}$ CD = $\sqrt{73}$; not congruent 8) RS = 10, TU =10; congruent

9) KL = $\sqrt{145}$, MN = $\sqrt{145}$; congruent 10) a. 14 mi b. 11.4 mi c. 2.6 mi