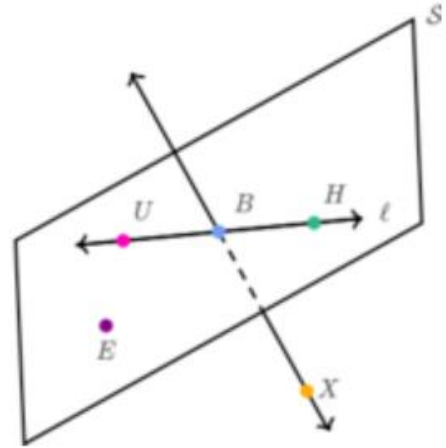


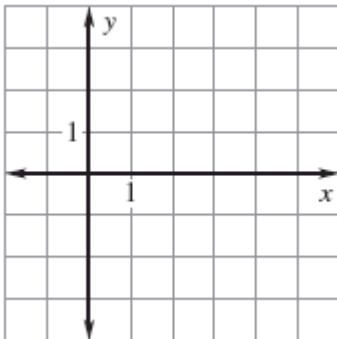
Use the diagram below to answer questions #1 – 5.

1. Please give two other names for  $\overleftrightarrow{UB}$ .
2. Please give another name for Plane UBE.
3. Please give another name for  $\overleftrightarrow{HB}$ .
4. Please name the intersection of plane S and  $\overleftrightarrow{BX}$ .
5. Please name three collinear points.

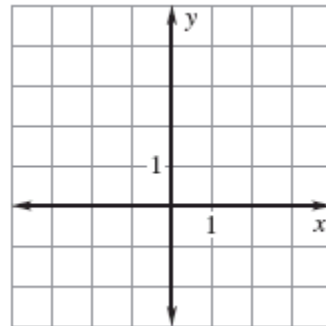


Plot the given points in a coordinate plane. Then determine whether the line segments named are congruent.

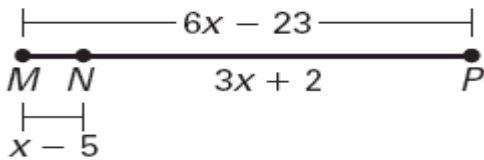
6.  $A(2, 2), B(4, 2), C(-1, -1), D(-1, 1)$ ;  
 $\overline{AB}$  and  $\overline{CD}$



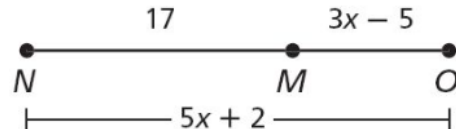
7.  $E(-3, 4), F(-1, 4), G(2, 4), H(-1, 4)$ ;  
 $\overline{EF}$  and  $\overline{GH}$



8. Find  $NP$ .



9. Find  $NO$ .



Point  $J$  is between  $H$  and  $K$  on  $\overline{HK}$ . Use the given information to write an equation in terms of  $x$ . Solve the equation. Then find  $HJ$  and  $JK$ .

10.  $HJ = 5x - 4$   
 $JK = 8x - 10$   
 $KH = 38$

11.  $HJ = 5x - 3$   
 $JK = x - 9$   
 $KH = 5x$

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

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

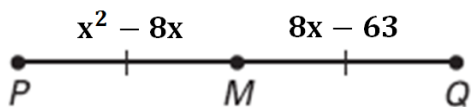
13.  $M(14, 7)$  and  $N(-9, 1)$

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

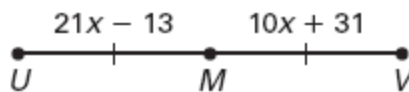
15.  $C(-5, -17)$  and  $D(-18, 12)$

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

16. Find  $MQ$ .

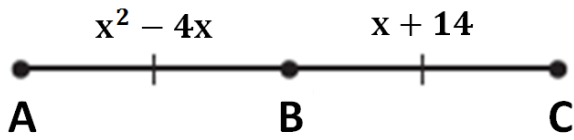


17. Find  $UV$ .

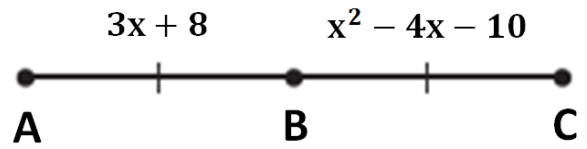


For problems #18 and 19, please solve for  $x$  and find all possible values for  $AB$ ,  $BC$  and  $AC$ .

18.

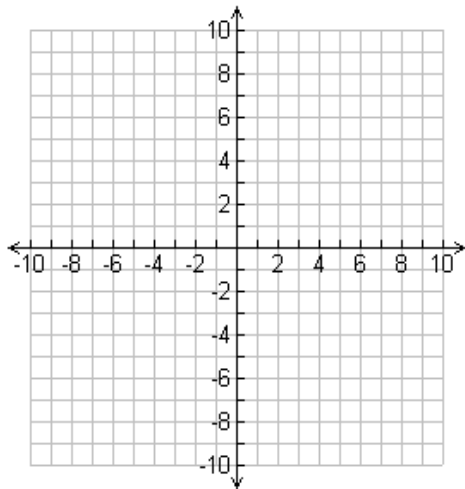


19.

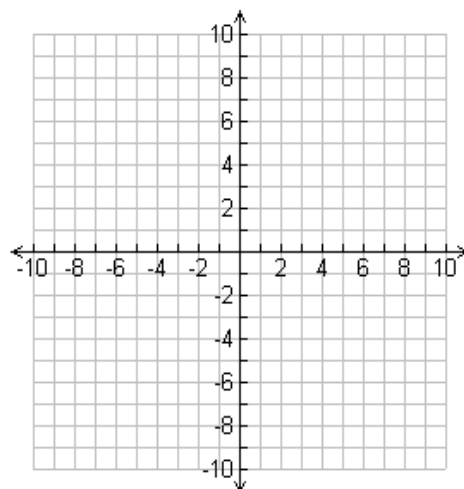


Use the given endpoint R and midpoint M of  $\overline{RS}$  to find the coordinates of the other endpoints.

20. R (6,0), M (0,2)

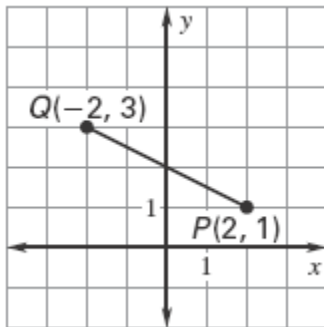


21. R (3,4), M (3, -2)

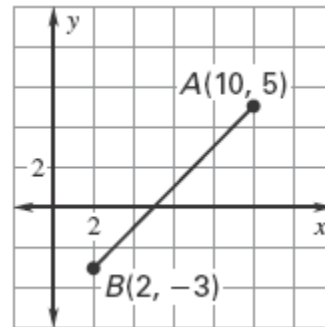


Find the length of the segment in simplest radical form.

22.



23.



The endpoints of two segments are given. Find each segment length in simplest radical form and tell whether the segments are congruent.

24.  $\overline{KL}$ :  $K(-4, 13), L(-1, -11)$

$\overline{MN}$ :  $M(-1, -2), N(-1, -11)$

25.  $\overline{OP}$ :  $O(6, -2), P(3, -2)$

$\overline{QR}$ :  $Q(5, 2), R(1, 5)$

### Answer Key

1.  $\overleftrightarrow{BU}, \overleftrightarrow{BH}, \overleftrightarrow{HB}, \overleftrightarrow{UH}, \overleftrightarrow{HU}$ , line  $l$
2. Plane S, Plane BHE, Plane BEH, Plane HEB, etc.
3.  $\overleftrightarrow{HU}$
4. Point B
5. U, B, H
6. Yes, they are congruent
7. No, they are not congruent
8.  $x = 10, NP = 32$
9.  $x = 5, NO = 27$
10.  $HJ = 16, JK = 22$
11.  $HJ = 57, JK = 3$
12.  $(8, 1)$
13.  $(2.5, 4)$
14.  $(-5.5, -1)$
15.  $(-11.5, -2.5)$
16.  $x = 9, MQ = 9$
17.  $x = 4, UV = 142$
18.  $x = 7, x = -2; AB = 21 \text{ or } 12, BC = 21 \text{ or } 12, AC = 42 \text{ or } 24$
19.  $x = 9, x = -2; AB = 35 \text{ or } 2, BC = 35 \text{ or } 2, AC = 70 \text{ or } 4$
20.  $(-6, 4)$
21.  $(3, -8)$
22.  $QP = 2\sqrt{5}$
23.  $AB = 8\sqrt{2}$
24.  $KL = 3\sqrt{65}, MN = 9$ ; No, they are not congruent
25.  $OP = 3, QR = 5$ ; No, they are not congruent