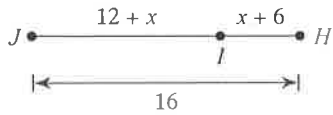


WS PC #1 Review (1.1 - 1.3)

Find the length indicated.

1) Find IH

$$JI + IH = JH$$



$$-1 + 6$$

$$\boxed{IH = 5}$$

$$12 + x + x + 6 = 16$$

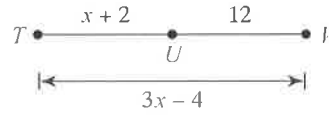
$$2x + 18 = 16$$

$$\begin{array}{r} -18 \\ -18 \end{array}$$

$$2x = -2$$

$$x = -1$$

2) Find TU



$$TU + UV = TV$$

$$x + 2 + 12 = 3x - 4$$

$$x + 14 = 3x - 4$$

$$\begin{array}{r} -x \\ -x \end{array}$$

$$14 = 2x - 4$$

$$\begin{array}{r} +4 \\ +4 \end{array}$$

$$18 = 2x$$

$$\frac{18}{2} = \frac{2x}{2}$$

$$x = 9$$

$$9 + 2$$

$$\boxed{TU = 11}$$

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

3) $(-6, 2), (3, 7)$

$$\frac{-6+3}{2} \quad \frac{2+7}{2}$$

$$\boxed{\left(-\frac{3}{2}, \frac{9}{2}\right)}$$

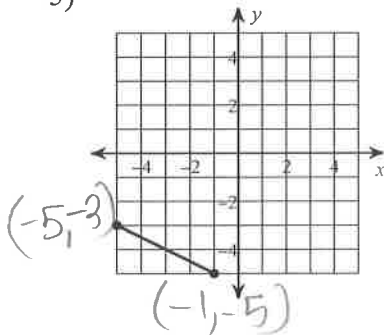
4) $(-10, -1), (7, -9)$

$$\frac{-10+7}{2} \quad \frac{-1+-9}{2}$$

$$\boxed{\left(-\frac{3}{2}, -5\right)}$$

Find the midpoint of each line segment.

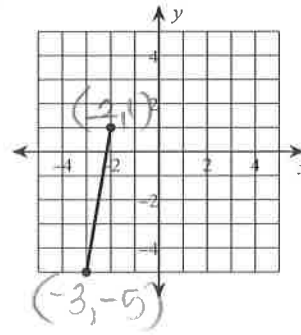
5)



$$\frac{-5+-1}{2} \quad \frac{-3+-5}{2}$$

$$\boxed{(-3, -4)}$$

6)

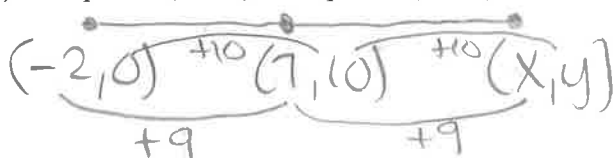


$$\frac{-3+-2}{2} \quad \frac{-5+-1}{2}$$

$$\boxed{\left(-\frac{5}{2}, -2\right)}$$

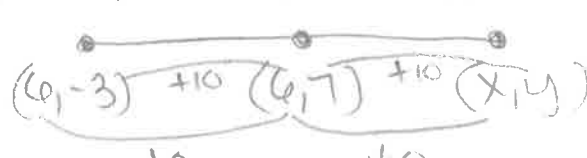
Find the other endpoint of the line segment with the given endpoint and midpoint.

7) Endpoint: $(-2, 0)$, midpoint: $(7, 10)$



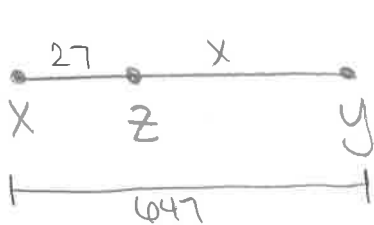
$$\boxed{(14, 20)}$$

8) Endpoint: $(6, -3)$, midpoint: $(6, 7)$



$$\boxed{(0, 17)}$$

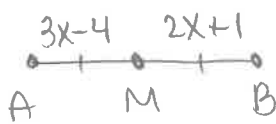
- 9) You travel from City X to City Y. You know that the round trip distance is 647 miles. City Z, a city you pass on the way, is 27 miles from City X. Find the distance from City Z to City Y.



$$\begin{array}{r} 27 + X = 647 \\ -27 \quad -27 \\ \hline X = 620 \end{array}$$

$$ZY = 620 \text{ miles}$$

- 10) Point M is the midpoint of line segment AB. If $AM = 3x - 4$ and $MB = 2x + 1$, find the length of AB.

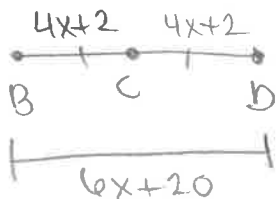


$$\begin{array}{r} 3x - 4 = 2x + 1 \\ -2x \quad -2x \\ \hline x - 4 = 1 \\ +4 \quad +4 \\ \hline x = 5 \end{array}$$

$$\begin{array}{r} 3(5) - 4 = 15 - 4 = 11 \\ 11(2) = 22 \end{array}$$

$$AB = 22$$

- 11) Point C is the midpoint of line segment BD. If $BC = 4x + 2$ and $BD = 6x + 20$, find the length of CD.



$$4x + 2 + 4x + 2 = 6x + 20$$

$$\begin{array}{r} 8x + 4 = 6x + 20 \\ -6x \quad -6x \\ \hline 2x + 4 = 20 \\ -4 \quad -4 \\ \hline 2x = 16 \\ \frac{2x}{2} = \frac{16}{2} \\ x = 8 \end{array}$$

$$\begin{array}{r} 4(8) + 2 \\ 32 + 2 \end{array}$$

$$CD = 34$$

Find the exact distance between each pair of points.

- 12) $(7, 4), (-5, 2)$

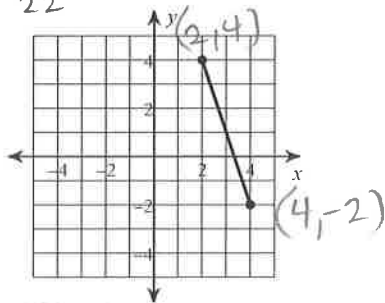
$$\begin{aligned} D &= \sqrt{(7 - (-5))^2 + (4 - 2)^2} \\ &= \sqrt{144 + 4} \end{aligned}$$

$$= \sqrt{148}$$

$$\begin{array}{r} \sqrt{148} \\ \swarrow \quad \searrow \\ 4 \quad 37 \\ \swarrow \quad \searrow \\ 2 \quad 2 \end{array}$$

$$D = 2\sqrt{37}$$

- 14)



$$\begin{aligned} D &= \sqrt{(2 - 4)^2 + (4 - (-2))^2} \\ &= \sqrt{4 + 36} \end{aligned}$$

$$= \sqrt{40}$$

$$\begin{array}{r} \sqrt{40} \\ \swarrow \quad \searrow \\ 4 \quad 10 \\ \swarrow \quad \searrow \\ 2 \quad 2 \end{array}$$

$$D = 2\sqrt{10}$$

- 13) $(4, 7), (1, 3)$

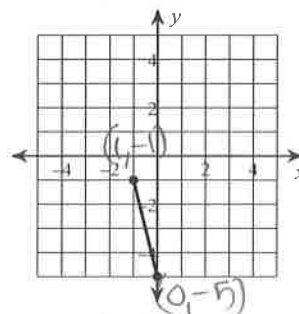
$$D = \sqrt{(4 - 1)^2 + (7 - 3)^2}$$

$$= \sqrt{9 + 16}$$

$$= \sqrt{25}$$

$$D = 5$$

- 15)



$$D = \sqrt{(1 - 0)^2 + (-1 - (-5))^2}$$

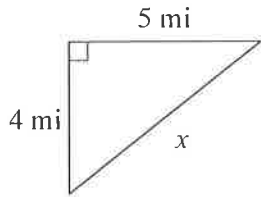
$$= \sqrt{1 + 16}$$

$$= \sqrt{17}$$

$$D = \sqrt{17}$$

Find the missing side of each triangle. Leave your answers in simplest radical form.

16)



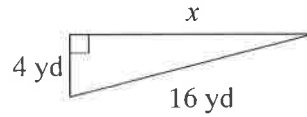
$$4^2 + 5^2 = x^2$$

$$16 + 25 = x^2$$

$$\sqrt{41} = \sqrt{x^2}$$

$$x = \sqrt{41} \text{ miles}$$

17)



$$4^2 + x^2 = 16^2$$

$$16 + x^2 = 256$$

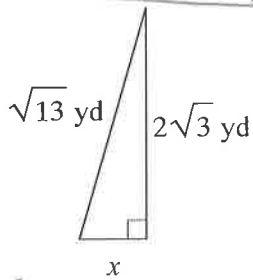
$$\begin{array}{r} -16 \\ \hline \end{array}$$

$$\sqrt{x^2} = \sqrt{240}$$

$$\begin{array}{r} 24 \quad 16 \\ \hline 4 \quad 6 \quad 25 \end{array}$$

$$x = 4\sqrt{15} \text{ yd}$$

18)



$$x^2 + (2\sqrt{3})^2 = (\sqrt{13})^2$$

$$x^2 + (2^2 \cdot 3) = 13$$

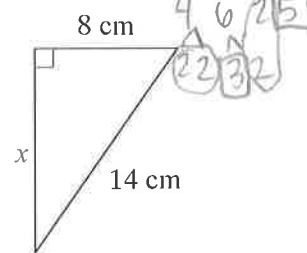
$$x^2 + 12 = 13$$

$$\begin{array}{r} -12 \quad -12 \\ \hline \end{array}$$

$$\sqrt{x^2} = \sqrt{1}$$

$$x = 1 \text{ yd}$$

19)



$$x^2 + 8^2 = 14^2$$

$$x^2 + 64 = 196$$

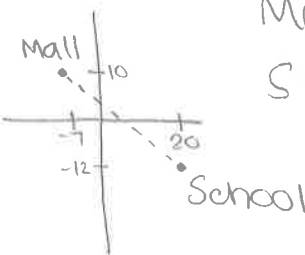
$$\begin{array}{r} -64 \quad -64 \\ \hline \end{array}$$

$$\sqrt{x^2} = \sqrt{132}$$

$$\begin{array}{r} 4 \quad 3 \quad 3 \\ \hline 12 \end{array}$$

$$x = 2\sqrt{33} \text{ cm}$$

20) Your school is 20 blocks east and 12 blocks south of your house. The mall is 10 blocks north and 7 blocks west of your house. You plan on going to the mall right after school. Find the distance between your school and the mall assuming there is a road directly connecting the school and the mall.



$$M(-7, 10)$$

$$S(20, -12)$$

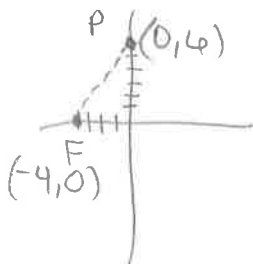
$$D = \sqrt{(-7-20)^2 + (10-(-12))^2}$$

$$= \sqrt{729 + 484}$$

$$= \sqrt{1213}$$

$$D = \sqrt{1213} \text{ blocks}$$

21) Your favorite pizza restaurant is 6 miles north of your house. Your friend lives 4 miles west of your house. Find the direct distance between the pizza restaurant and your friend's house. Leave your answer in simplest radical form.



$$D = \sqrt{(0-(-4))^2 + (6-0)^2}$$

$$= \sqrt{16 + 36}$$

$$= \sqrt{52}$$

$$\begin{array}{r} 4 \quad 1 \quad 3 \\ \hline 52 \end{array}$$

$$22$$

$$D = 2\sqrt{13} \text{ miles}$$

Use the diagram to the right to answer the questions.

22. Provide another name for \overleftrightarrow{PQ} .

line n

23. Name 3 collinear points.

S, P, T

24. Name the intersection of line m and plane R .

line m

25. Provide another name for plane R .

plane SVT (or any 3 non-collinear points that lie on the plane)

26. Name a set of opposite rays.

\overrightarrow{PS} \overrightarrow{PT}

27. Provide another name for line m .

\overleftrightarrow{ST}

