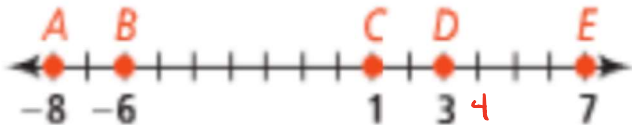


Tools For Geometry – Segments, Distance & Midpoint

Hw Section 1.2

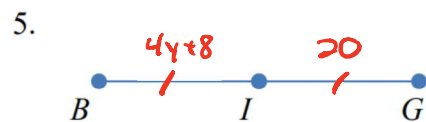
Name _____

Use the picture for questions 1 – 4.

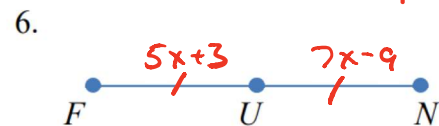


- Find $AB = 2$
- Find $EC = 6$
- What is the midpoint of \overline{CE} ? 4
- Is $\overline{BD} \cong \overline{CA}$? Explain why or why not.
 Yes, $\overline{BD} \cong \overline{CA}$ because $BD = CA$

Label the picture, then find the length of the given segment.

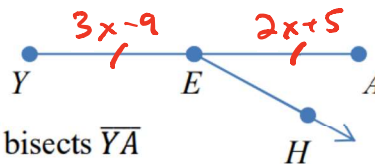


- I is the midpoint of \overline{BG}
 $BI = 4y + 8$
 $IG = 20$
 Find BI
- $BI = IG$ | $BI = 20$ (Duh)
- $4y + 8 = 20$
 $4y = 12$
 $y = 3$



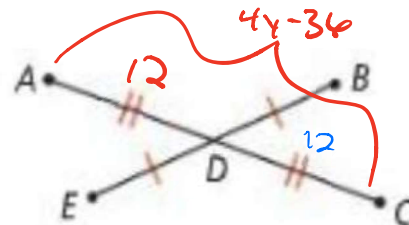
- $\overline{FU} \cong \overline{UN}$
 $FU = 5x + 3$
 $UN = 7x - 9$
 Find FU
- $FU = UN$ | $FU = 5x + 3$
- $5x + 3 = 7x - 9$ | $= 5(6) + 3$
- $3 = 2x - 9$ | $= 30 + 3$
- $12 = 2x$ | $FU = 33$
- $6 = x$

7.



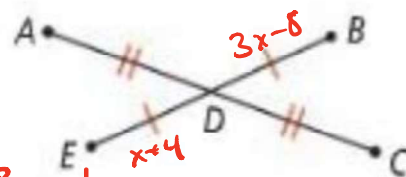
- \overline{EH} bisects \overline{YA}
 $EA = 2x + 5$
 $YE = 3x - 9$ | $YE = EA$
- Find EA
- $3x - 9 = 2x + 5$ | $EA = 2x + 5$
- $x - 9 = 5$ | $= 2(14) + 5$
- $x = 14$ | $= 28 + 5$
- $EA = 33$

11. If $AD = 12$ and $AC = 4y - 36$, find the value of y . Then find DC .



- $DC = 12$
- $AC = 4y - 36$
 $24 = 4y - 36$
 $60 = 4y$
 $15 = y$

12. If $ED = x + 4$ and $DB = 3x - 8$, find ED and DB .



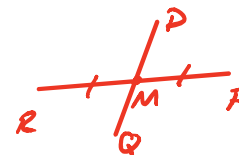
- $ED = DB$
- $x + 4 = 3x - 8$ | $ED = x + 4$ | $DB = 10$
- $x + 12 = 3x$ | $= (6) + 4$
- $12 = 2x$ | $ED = 10$
- $6 = x$

Draw and label a picture for each of the following. Indicate what line segments are congruent (if any).

13. A is the midpoint of \overline{HT}



14. \overline{DQ} bisects \overline{RF} at M .



15. \overline{TM} bisects \overline{WE} at T



Tools For Geometry – Segments, Distance & Midpoint

Hw Section 1.2

Name _____

Find the midpoint and distance given the two endpoints

16. (12,15) and (-8, -22)

$$M = \left(\frac{\sum x}{2}, \frac{\sum y}{2} \right)$$

$$= \left(\frac{(12) + (-8)}{2}, \frac{(15) + (-22)}{2} \right)$$

$$= \left(\frac{4}{2}, \frac{-7}{2} \right)$$

$$M = (2, -7/2)$$

$$d = \sqrt{[\Delta x]^2 + [\Delta y]^2}$$

$$= \sqrt{[(12) - (-8)]^2 + [(15) - (-22)]^2}$$

$$= \sqrt{[20]^2 + [37]^2}$$

$$= \sqrt{400 + 1369}$$

$$d = \sqrt{1769}$$

17. (-3,5) and (14, 28)

$$M = \left(\frac{\sum x}{2}, \frac{\sum y}{2} \right)$$

$$= \left(\frac{(-3) + (14)}{2}, \frac{(5) + (28)}{2} \right)$$

$$M = \left(\frac{11}{2}, \frac{33}{2} \right)$$

$$d = \sqrt{[\Delta x]^2 + [\Delta y]^2}$$

$$= \sqrt{[(-3) - (14)]^2 + [(5) - (28)]^2}$$

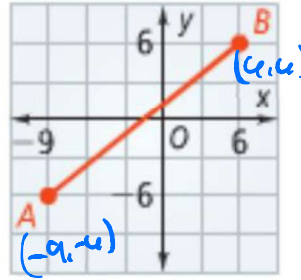
$$= \sqrt{[-17]^2 + [-23]^2}$$

$$= \sqrt{289 + 529}$$

$$d = \sqrt{818}$$

Find the midpoint and distance given the two endpoints

18.



$$M = \left(\frac{\sum x}{2}, \frac{\sum y}{2} \right)$$

$$= \left(\frac{(-9) + (6)}{2}, \frac{(-4) + (6)}{2} \right)$$

$$= \left(\frac{-3}{2}, \frac{0}{2} \right)$$

$$M = \left(\frac{-3}{2}, 0 \right)$$

$$AB = \sqrt{[\Delta x]^2 + [\Delta y]^2}$$

$$= \sqrt{[(-9) - (6)]^2 + [(-4) - (6)]^2}$$

$$= \sqrt{[-15]^2 + [-12]^2}$$

$$= \sqrt{225 + 144}$$

$$AB = \sqrt{369}$$

ALGEBRA REVIEW

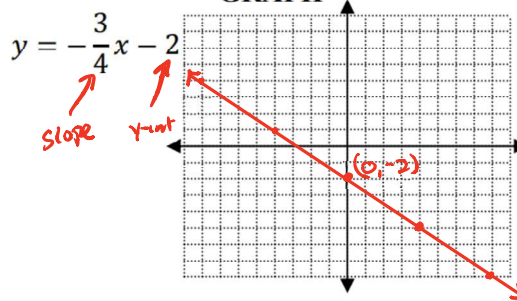
SOLVE

$$3 \cdot 2 + \frac{x \cdot 3}{3} = 10 \cdot 3$$

$$6 + x = 30$$

$$x = 24$$

GRAPH



MULTIPLY (distribute)

$$-2(2x - 3)$$

$$= -4x + 6$$

SOLVE

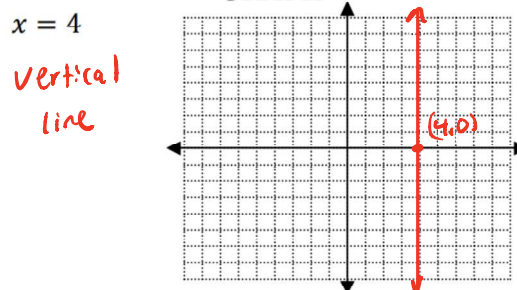
$$3 + 2y = 5y - 9$$

$$3 = 3y - 9$$

$$12 = 3y$$

$$4 = y$$

GRAPH



FACTOR

Factor out the greatest common factor (undistribute)

$$9x^2 + 12$$

$$= 3(3x^2 + 4)$$