

## Spiral Review

1.  $8(x + 3) = 12$

$$\begin{array}{r} 8x + 24 = 12 \\ -24 \quad -24 \\ \hline 8x = -12 \\ \frac{8x}{8} = \frac{-12}{8} \end{array} \quad \boxed{x = -\frac{3}{2}}$$

2.  $10x - 9 = 3x + 8$

$$\begin{array}{r} -3x \quad -3x \\ \hline 7x - 9 = 8 \\ +9 \quad +9 \\ \hline 7x = 17 \\ \frac{7x}{7} = \frac{17}{7} \end{array} \quad \boxed{x = \frac{17}{7}}$$

3. Name a line.

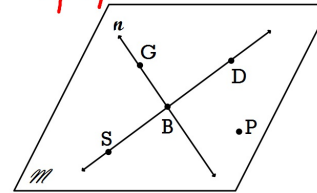
GB, line  $m$ ,  $\overleftrightarrow{SB}$

4. Name the plane.

plane  $M$ , GSD

5. Name three collinear points.

S, B, D



## Review 1.2

Given that R is between S and T, find each measure.

1. If  $RS=6$  and  $TR=5.5$ , find  $TS$ .

2. If  $TS=11.5$  and  $TR=4.4$ , find  $RS$ .

3. If  $SR=x+3$ ,  $RT=x+6$  and  $ST=27$ , find  $x$  and  $RT$ .

## Section 1.3 Distance & Midpoints

**Distance between points:**

**1. Number line:** find the absolute value of the difference of the coordinates.

$$|a-b|$$

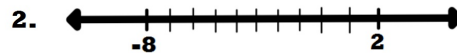
**2. Coordinate plane:** use the distance formula

$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

given:  $(x_1, y_1)$  and  $(x_2, y_2)$

**Example:**  $d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$   
**1. Find the distance between  $(2, -3)$  and  $(-1, -4)$**

$$\begin{aligned} &= \sqrt{(-1-2)^2 + (-4+3)^2} \\ &= \sqrt{(-3)^2 + (-1)^2} \\ * &= \sqrt{9 + 1} \\ &= \sqrt{10} \approx 3.2 \end{aligned}$$



$$|-8-2| = |-10| = 10$$

**Midpoints:**

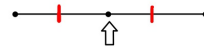
**1. Number line: average the coordinates**

**2. Coordinate plane: average the x's and y's separately (answer is ordered pair)**

Given:  $(x_1, y_1)$   $(x_2, y_2)$

$$\left( \frac{x_1+x_2}{2}, \frac{y_1+y_2}{2} \right)$$

**Segment bisector: a line, segment or plane that intersects a segment at its midpoint**



**Examples:**

**1. Find the midpoint of  $\overline{JK}$  if the coordinate of J is -12 and the coordinate of K is 16.**

add #s,  $\div 2$

$$\frac{-12+16}{2} = \frac{4}{2}$$
$$= \boxed{2}$$

**2. Find the midpoint of  $\overline{GH}$ ,  $G(8,-6)$   $H(-14,12)$**

$$\left( \frac{8+(-14)}{2}, \frac{-6+12}{2} \right) = \left( \frac{-6}{2}, \frac{6}{2} \right)$$
$$= \boxed{(-3, 3)}$$

3. Find the coordinates of D if E(-6,4) is the midpoint of  $\overline{DF}$  and F(-5,-3).

$$\left(\frac{x_1+x_2}{2}, \frac{y_1+y_2}{2}\right) = \text{midpoint}$$

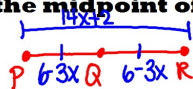
$$\left(\frac{-5+x_2}{2}, \frac{-3+y_2}{2}\right) = (-6, 4)$$

$$-5+x_2 = -12$$

$$-3+y_2 = 8$$

$$(-7, 11)$$

4. Find PR if Q is the midpoint of  $\overline{PR}$ ,  $PR=14x+2$  and  $QR=6-3x$ .



**Turn in:**  
**p. 30 (2, 4, 8, 10)**



**Homework:**  
**workbook 1.3 Skills Practice**  
**(1-19)**

