

Geometry Chapter 1 Review

1. Name 3 collinear points on plane R.

C, G, B

2. Give another name for plane S.

Plane AFG (possible answer)

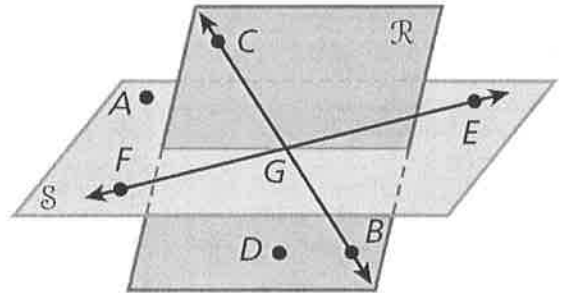
3. Name the intersection of line BC and Plane S.

G

4. Name a ray with endpoint E.

\overrightarrow{EG} or \overrightarrow{EF}

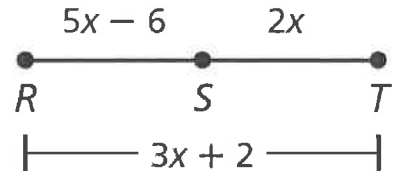
* on a ray the endpoint is the starting point



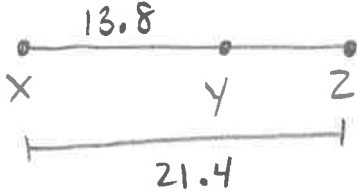
5. S is between R and T. Find RT.

$$\begin{aligned} RS + ST &= RT \\ 5x - 6 + 2x &= 3x + 2 \\ 7x - 6 &= 3x + 2 \\ 4x - 6 &= 2 \\ 4x &= 8 \\ x &= 2 \end{aligned}$$

$$\begin{aligned} RT &= 3(2) + 2 \\ \boxed{RT} &= \boxed{8} \end{aligned}$$



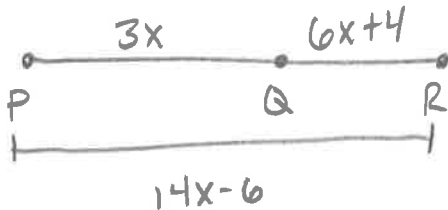
6. Y is between X and Z. $XY = 13.8$, and $XZ = 21.4$. Find YZ.



$$\begin{aligned} XY + YZ &= XZ \\ 13.8 + YZ &= 21.4 \\ -13.8 & \quad -13.8 \end{aligned}$$

$$\boxed{YZ = 7.6}$$

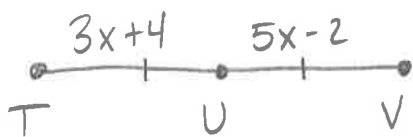
7. Q is between P and R. $PQ = 3x$, $QR = 6x + 4$, and $PR = 14x - 6$. Find PR.



$$\begin{aligned} PQ + QR &= PR \\ 3x + 6x + 4 &= 14x - 6 \\ 9x + 4 &= 14x - 6 \\ 4 &= 5x - 6 \\ 10 &= 5x \\ 2 &= x \end{aligned}$$

$$\begin{aligned} PR &= 14(2) - 6 \\ \boxed{PR} &= \boxed{22} \end{aligned}$$

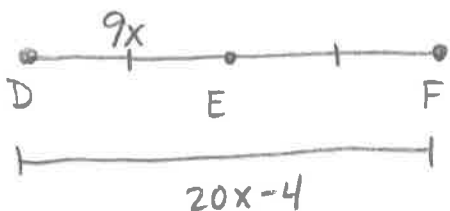
8. U is the Midpoint of TV, $TU = 3X + 4$, and $UV = 5X - 2$. Find TU, UV, and TV.



$$\begin{aligned} TU &= UV \\ 3x+4 &= 5x-2 \\ 4 &= 2x-2 \\ 6 &= 2x \\ 3 &= x \end{aligned}$$

$$\begin{aligned} TU &= 3(3)+4 = 13 \\ UV &= 13 \\ TV &= 13+13 = 26 \end{aligned}$$

9. E is the midpoint of DF, $DE = 9X$, and $DF = 20X - 4$. Find DE, EF, and DF.

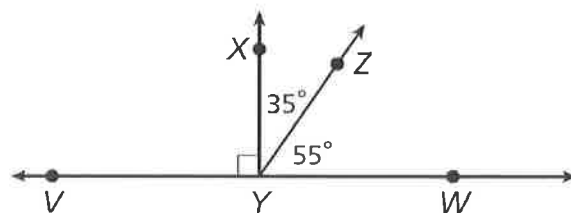


$$\begin{aligned} 9x + 9x &= 20x - 4 \\ 18x &= 20x - 4 \\ -2x &= -4 \\ x &= 2 \end{aligned}$$

$$\begin{aligned} DE &= 9(2) = 18 \\ EF &= 18 \\ DF &= 18 + 18 = 36 \end{aligned}$$

10. Classify each angle as acute, right, or obtuse.

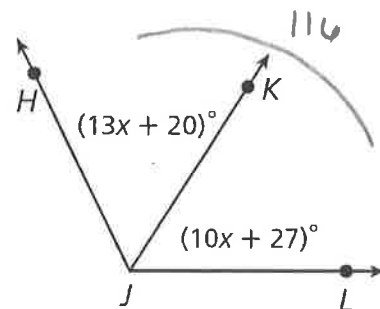
- a. $\angle XYW$ b. $\angle ZYV$ c. $\angle XYZ$
 Right Obtuse Acute



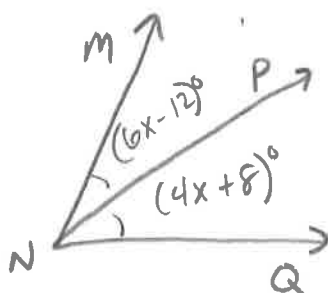
11. If $m\angle HJL = 116^\circ$, find the $m\angle HJK$.

$$\begin{aligned} m\angle HJK + m\angle KJL &= m\angle HJL \\ 13x + 20 + 10x + 27 &= 116 \\ 23x + 47 &= 116 \\ 23x &= 69 \\ x &= 3 \end{aligned}$$

$$\begin{aligned} m\angle HJK &= 13(3) + 20 \\ m\angle HJK &= 59^\circ \end{aligned}$$



12. \overline{NP} bisects $\angle MNQ$, $m\angle MNP = (6x - 12)^\circ$, and $m\angle PNQ = (4x + 8)^\circ$. Find $m\angle MNQ$.

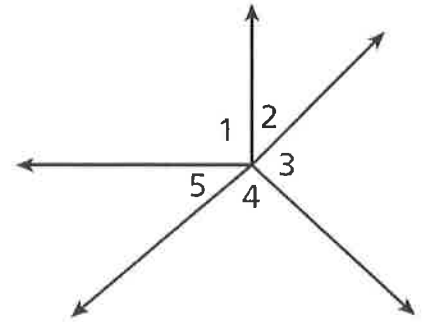


$$\begin{aligned} m\angle MNP &= m\angle PNQ \\ 6x - 12 &= 4x + 8 \\ 2x - 12 &= 8 \\ 2x &= 20 \\ x &= 10 \end{aligned}$$

$$\begin{aligned} m\angle MNP &= 6(10) - 12 \\ m\angle MNP &= 48^\circ \end{aligned}$$

$$m\angle MNQ = 2(48) = 96^\circ$$

Tell whether the angles are only adjacent, adjacent and linear pair, or not adjacent.



13. $\angle 1$ and $\angle 2$ 14. $\angle 3$ and $\angle 4$ 15. $\angle 2$ and $\angle 5$

Adjacent Linear Pair Not Adjacent
Adjacent

14. The $m\angle A = (2x + 30)^\circ$ and $m\angle B = (3x - 20)^\circ$. If $\angle A$ and $\angle B$ are supplementary, what is the $m\angle B$?

$$m\angle A + m\angle B = 180$$

$$2x + 30 + 3x - 20 = 180$$

$$5x + 10 = 180$$

$$5x = 170$$

$$x = 34$$

$$m\angle B = 3(34) - 20$$

$$m\angle B = 82^\circ$$

15. What is the distance from $X(-2, 4)$ to $Y(6, 1)$.

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

$$d = \sqrt{(6 - (-2))^2 + (1 - 4)^2}$$

$$d = \sqrt{(8)^2 + (-3)^2}$$

$$d = \sqrt{64 + 9}$$

$$d = \sqrt{73}$$

16. If $L(-4, 2)$ and $M(3, -2)$, what is LM ?

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

$$LM = \sqrt{(3 - (-4))^2 + (-2 - 2)^2}$$

$$LM = \sqrt{(7)^2 + (-4)^2}$$

$$LM = \sqrt{49 + 16}$$

$$LM = \sqrt{65}$$

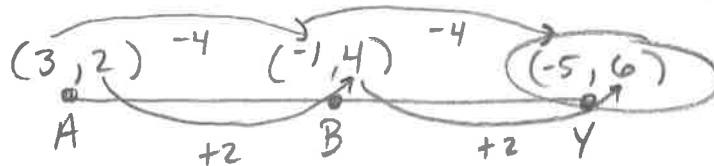
17. Given \overline{AY} with endpoints $A(5, 9)$ and $Y(-11, 3)$ and midpoint M , what are the coordinates for M ?

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

$$\left(\frac{5 + (-11)}{2}, \frac{9 + 3}{2} \right)$$

$$\left(\frac{-6}{2}, \frac{12}{2} \right) \longrightarrow (-3, 6)$$

18. B is the midpoint of \overline{AY} . A has coordinates $(3, 2)$ and B has coordinates $(-1, 4)$. What are the coordinates of Y ?



19. Find the area and perimeter of triangle ABC.

$$AB = 4$$

$$a^2 + b^2 = c^2 \quad a^2 + b^2 = c^2$$

$$3^2 + 3^2 = c^2 \quad 1^2 + 3^2 = c^2$$

$$9 + 9 = c^2 \quad 1 + 9 = c^2$$

$$\sqrt{18} = \sqrt{c^2} \quad \sqrt{10} = \sqrt{c^2}$$

$$4.2 = c \quad 3.2 = c$$

$$AC = 4.2$$

$$BC = 3.2$$

$$A = \frac{1}{2}bh$$

$$= \frac{1}{2}(4)(3)$$

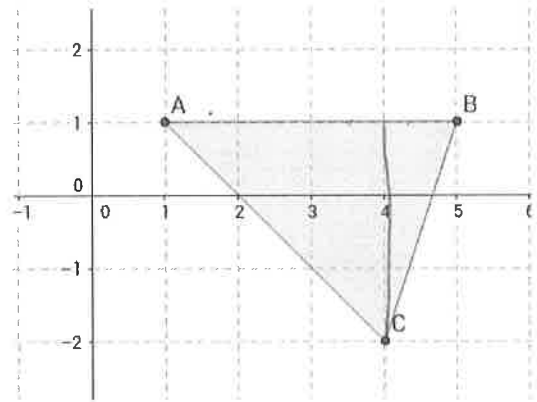
$$= \frac{1}{2}(12)$$

$$= 6$$

$$P = 4 + 4.2 + 3.2 = 11.4$$

Perimeter: 11.4 units

Area: 6 units²



20. Find the area and perimeter of triangle ABC.

$$a^2 + b^2 = c^2 \quad a^2 + b^2 = c^2 \quad a^2 + b^2 = c^2$$

$$3^2 + 3^2 = c^2 \quad 2^2 + 6^2 = c^2 \quad 3^2 + 5^2 = c^2$$

$$9 + 9 = c^2 \quad 4 + 36 = c^2 \quad 9 + 25 = c^2$$

$$\sqrt{18} = \sqrt{c^2} \quad \sqrt{40} = \sqrt{c^2} \quad \sqrt{34} = \sqrt{c^2}$$

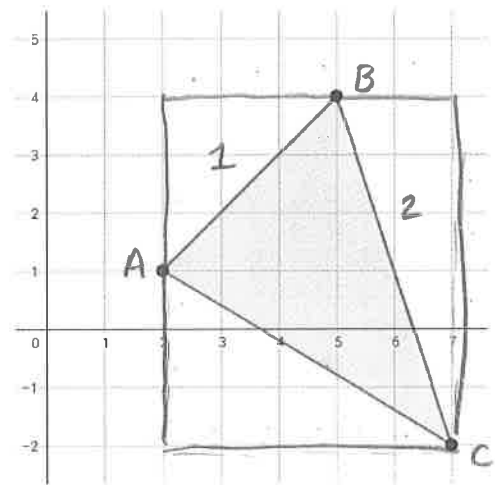
$$4.2 = c \quad 6.3 = c \quad 5.8 = c$$

$$AB = 4.2 \quad BC = 6.3 \quad AC = 5.8$$

$$P = 4.2 + 6.3 + 5.8$$

$$P = 16.3 \text{ units}$$

Perimeter: 16.3 units



$$A_{\text{TOTAL}} = 6(5) = 30$$

$$A_{\Delta 1} = \frac{1}{2}(3)(3) = 4.5$$

$$A_{\Delta 2} = \frac{1}{2}(2)(6) = 6$$

$$A_{\Delta 3} = \frac{1}{2}(3)(5) = 7.5$$

$$A_{\Delta ABC} = 30 - 18$$

$$A_{\Delta ABC} = 12$$

} 18

Area: 12 units²