

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)

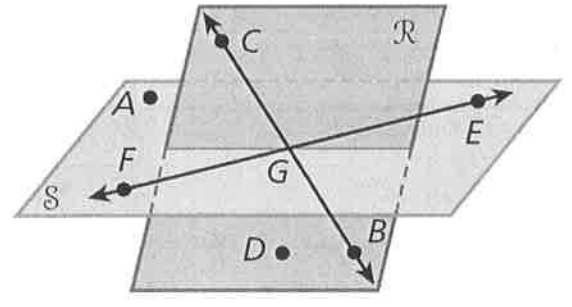
3. Name the intersection of line BC and Plane S.

G

4. Name a ray with endpoint E.

\overrightarrow{EG} or \overrightarrow{EF}

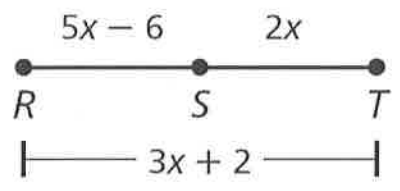
* on a ray the endpoint is the starting point



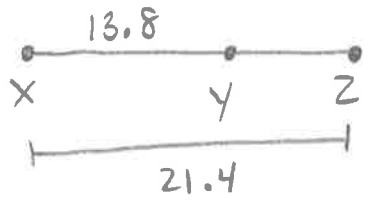
5. S is between R and T. Find RT.

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

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

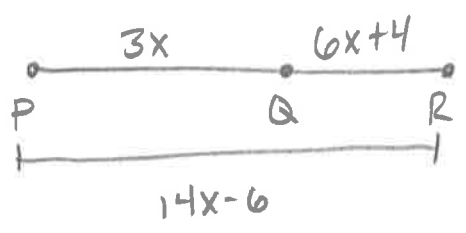


6. Y is between X and Z. $XY = 13.8$, and $XZ = 21.4$. Find YZ.



$$\begin{aligned}
 XY + YZ &= XZ \\
 13.8 + YZ &= 21.4 \\
 -13.8 & \quad -13.8 \\
 \boxed{YZ} &= \boxed{7.6}
 \end{aligned}$$

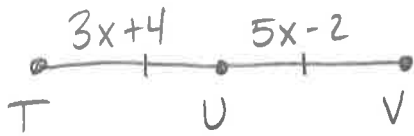
7. Q is between P and R. $PQ = 3x$, $QR = 6x + 4$, and $PR = 14x - 6$. Find PR.



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

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

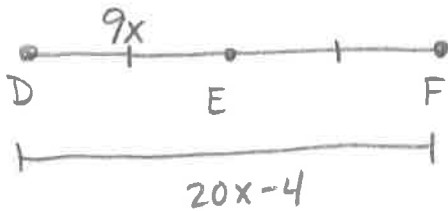
8. U is the Midpoint of TV, $TU = 3X + 4$, and $UV = 5X - 2$. Find TU, UV, and TV.



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

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

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

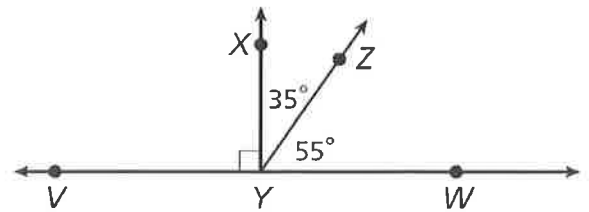


$$\begin{aligned} 9x + 9x &= 20x - 4 \\ 18x &= 20x - 4 \\ -2x &= -4 \\ x &= 2 \end{aligned}$$

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

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

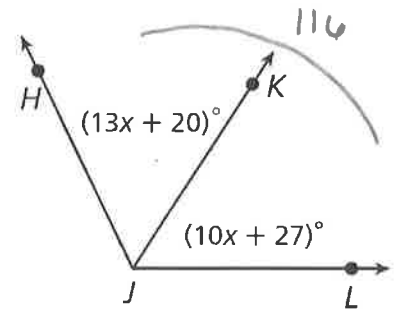
- a. $\angle XYW$ b. $\angle ZYV$ c. $\angle XYZ$
 Right Obtuse Acute



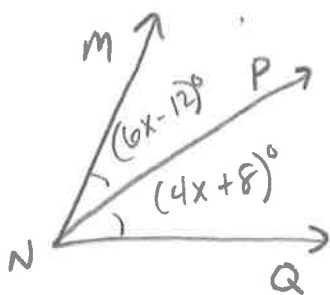
11. If $m\angle HJL = 116^\circ$, find the $m\angle HJK$.

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

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



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

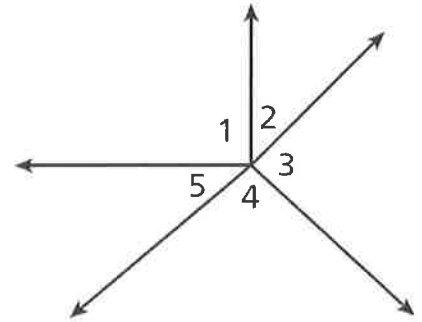


$$\begin{aligned} m\angle MNP &= m\angle PNQ \\ 6x - 12 &= 4x + 8 \\ 2x - 12 &= 8 \\ 2x &= 20 \\ x &= 10 \end{aligned}$$

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

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

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
Adjacent

Not 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 $m\angle B$?

$$\begin{aligned} m\angle A + m\angle B &= 180 \\ 2x + 30 + 3x - 20 &= 180 \\ 5x + 10 &= 180 \\ 5x &= 170 \\ x &= 34 \end{aligned}$$

$$\begin{aligned} m\angle B &= 3(34) - 20 \\ \boxed{m\angle B} &= \boxed{82^\circ} \end{aligned}$$

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

$$\begin{aligned} d &= \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2} \\ d &= \sqrt{(6 - (-2))^2 + (1 - 4)^2} \\ d &= \sqrt{(8)^2 + (-3)^2} \\ d &= \sqrt{64 + 9} \\ d &= \sqrt{73} \end{aligned}$$

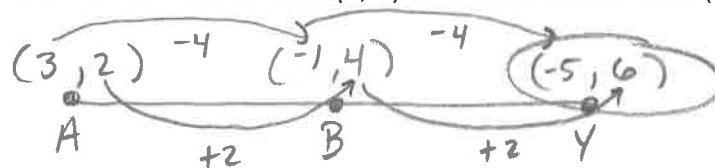
16. If $L(-4, 2)$ and $M(3, -2)$, what is LM ?

$$\begin{aligned} d &= \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2} \\ LM &= \sqrt{(3 - (-4))^2 + (-2 - 2)^2} \\ LM &= \sqrt{(7)^2 + (-4)^2} \\ LM &= \sqrt{49 + 16} \\ LM &= \sqrt{65} \end{aligned}$$

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

$$\begin{aligned} &\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right) \\ &\left(\frac{5 + (-11)}{2}, \frac{9 + 3}{2} \right) \\ &\left(\frac{-6}{2}, \frac{12}{2} \right) \longrightarrow (-3, 6) \end{aligned}$$

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. Round answers to the nearest tenth, if necessary.

$$3^2 + 3^2 = c^2$$

$$9 + 9 = c^2$$

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

$$\sqrt{9} \sqrt{2}$$

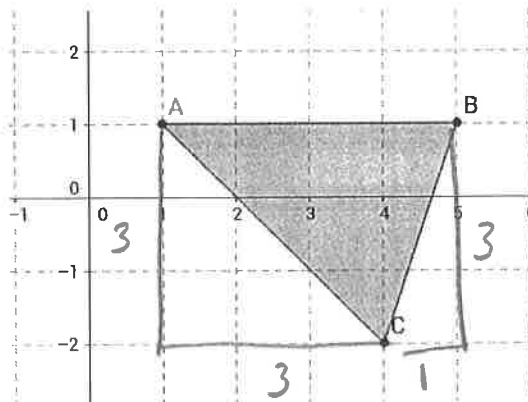
$$3\sqrt{2} = c$$

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

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

$$\sqrt{10} = c$$

$$A = \frac{1}{2}(4)(3) = 6$$



Perimeter: $3\sqrt{2} + \sqrt{10} + 4$ units

Area: 6 units^2

20. Find the area and perimeter of triangle ABC. Round answers to the nearest tenth, if necessary.

$$3^2 + 3^2 = c^2$$

$$9 + 9 = c^2$$

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

$$\sqrt{9} \sqrt{2}$$

$$3\sqrt{2} = c$$

$$2^2 + 6^2 = c^2$$

$$4 + 36 = c^2$$

$$\sqrt{40} = \sqrt{c^2}$$

$$\sqrt{4} \sqrt{10}$$

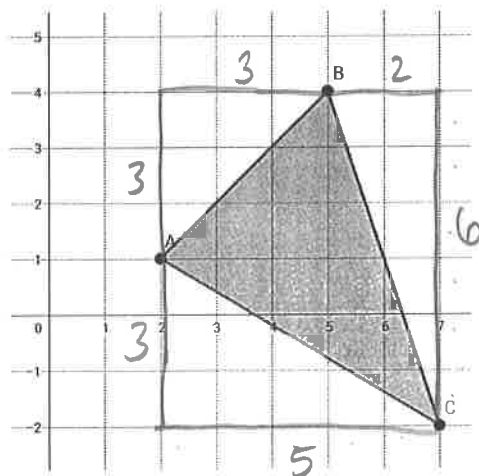
$$2\sqrt{10} = c$$

$$3^2 + 5^2 = c^2$$

$$9 + 25 = c^2$$

$$34 = c^2$$

$$\sqrt{34} = c$$



$$A_{TOT} = 6(5) = 30$$

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

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

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

$$A = 30 - 18 = 12 \text{ units}^2$$

Perimeter: $3\sqrt{2} + 2\sqrt{10} + \sqrt{34}$ units