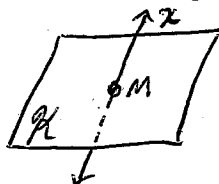
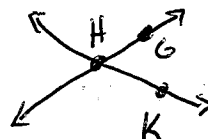


DRAW DIAGRAMS

1. ℓ intersects \angle at M



2. \overleftrightarrow{GH} and \overleftrightarrow{HK} intersect



3. Write in "if...then" form.

You are on the Price is Right if you are playing PLINKO

If you are playing PLINKO, then you are on the Price is Right

4. Write the converse.

If it is snowing, then it is cold outside.

If it is cold outside, then it is snowing

5. Find the distance between $(-1, 7)$ and $(0, 5)$.
 x_1, y_1 x_2, y_2

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

$$d = \sqrt{(0 - (-1))^2 + (5 - 7)^2}$$

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

$$d = \sqrt{1 + 4}$$

$$d = \sqrt{5} \approx 2.24$$

6. Find the midpoint of $(3, -4)$ and $(-8, -2)$.
 x_1, y_1 x_2, y_2

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

$$\left(\frac{3 + (-8)}{2}, \frac{-4 + (-2)}{2} \right) = \left(\frac{-5}{2}, \frac{-6}{2} \right) = (-2.5, -3)$$

7. \overline{CK} with point G between C and K.
CG = $8w$, GK = $5w + 15$

$$8w = 5w + 15$$

$$3w = 15$$

$$w = 5$$

G is the midpoint of \overline{CK}

$$w = 5$$

$$CK = 80$$

$$8(5) = 40$$

$$5(5) + 15 = 40$$

$$40 + 40 = 80$$

8. R is between X and A. $XR = 2y + 1$, $XA = 9y - 2$, $RA = 3y + 11$

$$y = 3.5$$

$$XR = 8$$

$$2(3.5) + 1$$

$$2y + 1 + 3y + 11 = 9y - 2$$

$$5y + 12 = 9y - 2$$

$$14 = 4y$$

$$3.5 = y$$

$$\overline{XA} \text{ with point R between X and A. } \overline{XR} = 2y + 1, \overline{RA} = 3y + 11, \overline{XA} = 9y - 2$$

9. $\angle C \cong \angle T$, $\angle C = 13x - 2$, $\angle T = 10x + 13$. Is $\angle C$ acute, right or obtuse? Show your work!

$$\begin{aligned}\angle C &\cong \angle T \\ 13x - 2 &= 10x + 13 \\ 3x - 2 &= 13 \\ 3x &= 15 \\ x &= 5\end{aligned}$$

$$\begin{aligned}m\angle C &= 13(5) - 2 \\ m\angle C &= 63^\circ\end{aligned}$$

Acute

10. $\angle K$ and $\angle Y$ are supplementary angles. If $\angle K = 2x + 9$ and $\angle Y = 3x + 11$, find "x" and the measure of $\angle Y$.

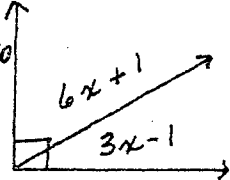
$$\begin{aligned}\angle K + \angle Y &= 180^\circ \\ 2x + 9 + 3x + 11 &= 180 \\ 5x + 20 &= 180 \\ 5x &= 160\end{aligned}$$

$x = 32$

$$m\angle Y = 3(32) + 11$$

$m\angle Y = 107^\circ$

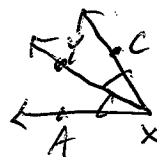
11. $6x + 1 + 3x - 1 = 90$
 $9x = 90$
 $x = 10$



$x = 10$

12. \overrightarrow{XY} bisects $\angle AXC$. A supplement of $\angle AXC$ is 126° .

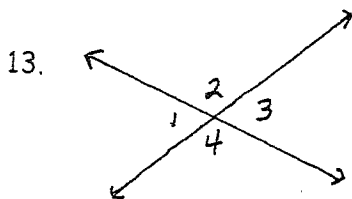
$$\angle YXC = 27^\circ$$



This means

$$\begin{aligned}m\angle AXC &= 180 - 126 \\ &= 54^\circ\end{aligned}$$

$$54 \div 2 = 27^\circ$$



- a. $\angle 1 = 4x + 7$, $\angle 2 = 6x + 3$ Linear Pair $\angle 1 + \angle 2 = 180^\circ$

$$x = 17^\circ$$

$$\angle 1 = 75^\circ \quad 4(17) + 7$$

$$\angle 3 = 75^\circ \quad (\text{vertical to } \angle 1)$$

$$\begin{aligned}4x + 7 + 6x + 3 &= 180 \\ 10x + 10 &= 180 \\ 10x &= 170 \\ x &= 17\end{aligned}$$

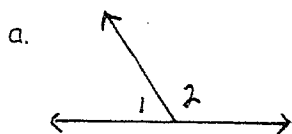
- b. $\angle 2 = 9x - 1$, $\angle 4 = 7x + 13$ Vertical Pair $\angle 2 \cong \angle 4$

$$x = 7$$

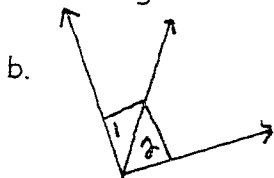
$$\angle 4 = 62^\circ \quad 7(7) + 13$$

$$\begin{aligned}9x - 1 &= 7x + 13 \\ 2x &= 14 \\ x &= 7\end{aligned}$$

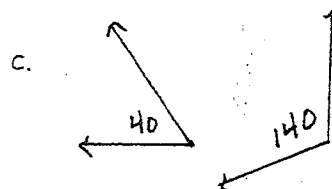
15. Identify the angles as adjacent, supplementary, complementary, linear pair, vertical or none of these. (A problem might have more than one answer.)



Adjacent
Supplementary
Linear Pair

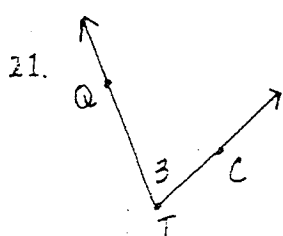


Adjacent
Complementary



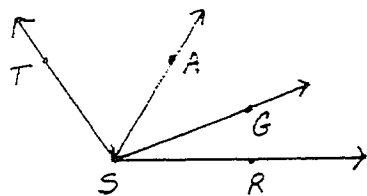
Supplementary

Name Vijay



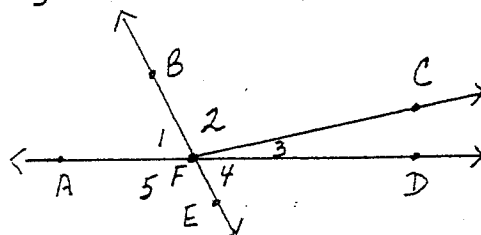
21. a. The sides of the angle are \overrightarrow{TQ} and \overrightarrow{TC} .
 b. The vertex of the angle is T.
 c. The names of the angle are $\angle QTC$, $\angle CTQ$, $\angle T$, and $\angle 3$.

22. Name all angles in the diagram.



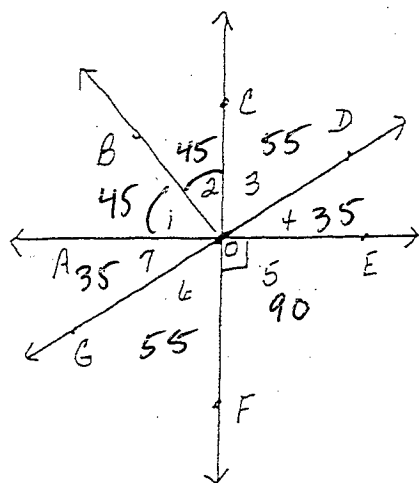
- $\angle TSA$ $\angle TSG$ $\angle TSR$
 $\angle ASG$ $\angle ASR$
 $\angle GSR$

Use the diagram to answer questions 23 - 31.



23. Another name for $\angle 2$ is $\angle BFC$.
 24. The vertex of $\angle 4$ is F.
 25. The common side of $\angle 1$ and $\angle 2$ is \overrightarrow{FB} .
 26. Another name for $\angle 5$ is $\angle AFE$.
 27. The sides of $\angle 4$ are \overrightarrow{FE} and \overrightarrow{FD} .
 28. Name all angles that have \overrightarrow{FC} as a side. $\angle BFC$, $\angle AFC$, $\angle EFC$, $\angle DFC$.
 29. Obtuse angles that have \overrightarrow{FA} as a side are $\angle CFA$ and $\angle EFA$.
 30. The sides of $\angle DFB$ are \overrightarrow{FB} and \overrightarrow{FD} .
 31. A point in the interior of $\angle DFB$ is C.

32.



\overrightarrow{OB} bisects $\angle AOC$
 $\angle 7 = 35^\circ$

a) $\angle 2 = 45^\circ$

b) $\angle 4 = 35^\circ$

c) $\angle BOE = 135^\circ$ $45 + 55 + 35$

d) $\angle FOD = 125^\circ$ $90 + 35$

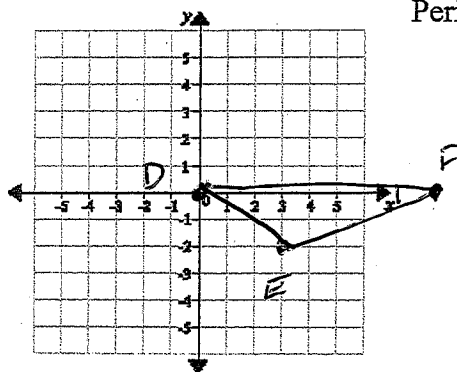
Find the perimeter of the figures below.

33. D(0, 0), E(3, -2), F(8, 0)

DE = 3.6 EF = 5.4 FD = 8

Perimeter = 17

$3.6 + 5.4 + 8$

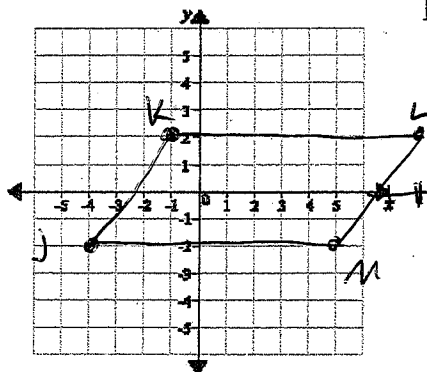


34. J(-4, -2), K(-1, 2), L(8, 2), M(5, -2)

JK = 5 KL = 9 LM = 5 MJ = 9

Perimeter = 28

$9 + 5 + 9 + 5$



$DE = \sqrt{(3-0)^2 + (-2-0)^2}$

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

$= \sqrt{9+4}$

$= \sqrt{13}$

$= 3.6$

$EF = \sqrt{(8-3)^2 + (0-(-2))^2}$

$= \sqrt{(5)^2 + (2)^2}$

$= \sqrt{25+4}$

$= \sqrt{29}$

$= 5.4$

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

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

$= \sqrt{9+16}$

$= \sqrt{25}$

$= 5$

$LM = \sqrt{(5-8)^2 + (-2-2)^2}$

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

$= \sqrt{9+16}$

$= \sqrt{25}$

$= 5$