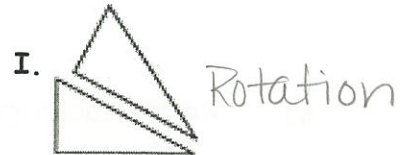
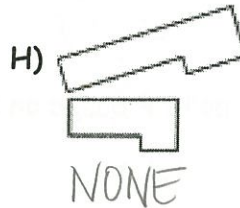
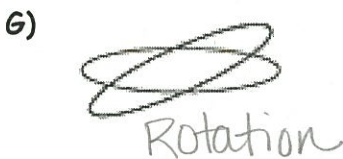
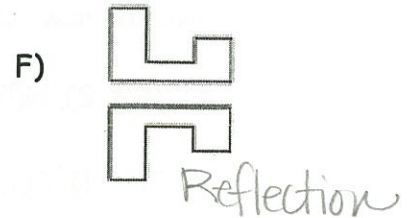
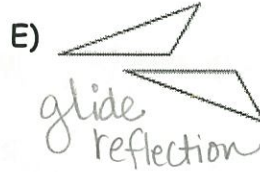
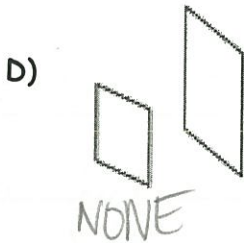
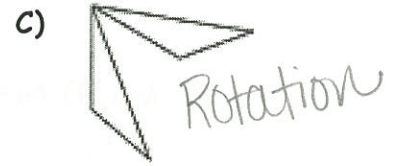
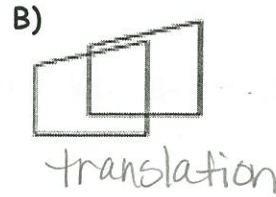
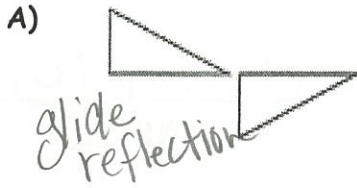


Chapter 12 Review

Name Key

translation & reflection

1). Tell whether the transformation is a reflection, rotation, translation, glide reflection, or none of the above.



2). Fill in the blank.

- A) A rotation with positive magnitude means the figure is rotated counter clockwise
- B) A rotation with negative magnitude means that the figure is rotated clockwise.
- C) A figure that is reflected over two parallel lines is called translation.
- D) A figure that is reflected over two intersecting lines is called a rotation.
- E) A figure that is translated then reflected is called a glide reflection.

3). Reflect the figure with the given vertices across the given line. Give the new vertices.

A) $E(-3, 2), P(0, 2), Q(-2, 5)$; x axis $E' \underline{(-3, -2)}$ $P' \underline{(0, -2)}$ $Q' \underline{(-2, -5)}$

B) $J(2, -1), K(4, -2), L(4, -3)$; y axis $J' \underline{(-2, -1)}$ $K' \underline{(-4, -2)}$ $L' \underline{(-4, -3)}$

C) $P(2, -2), Q(4, -2), R(3, -4)$; $y = x$ $P' \underline{(-2, 2)}$ $Q' \underline{(-2, 4)}$ $R' \underline{(-4, 3)}$

4). Translate the figure with the given vertices along the given vector. Give the new vertices.

A) $A(1, 3), B(4, 1), C(4, 4); \langle -5, 2 \rangle$ $A' \underline{(-4, 5)}$ $B' \underline{(-1, 3)}$ $C' \underline{(-1, 6)}$

B) $M(1, 4), N(4, 4), P(3, 1); \langle -3, -3 \rangle$ $M' \underline{(-2, 1)}$ $N' \underline{(1, 1)}$ $P' \underline{(0, -2)}$

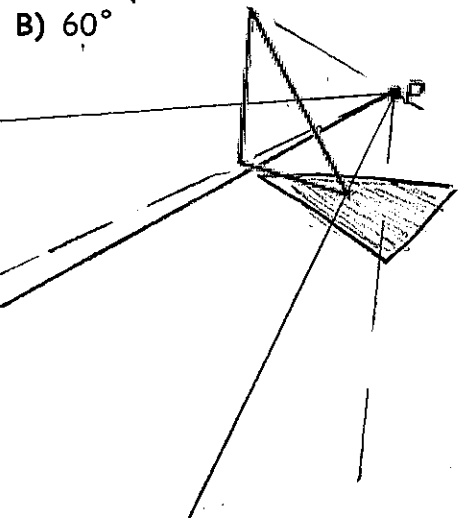
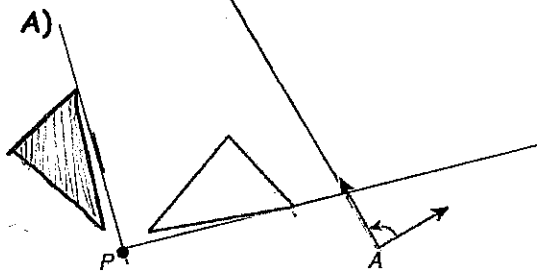
5). Rotate the figure with the given vertices about the origin using the given angle of rotation. Give the new vertices.

A) $M(2, 2), N(5, 2), P(3, -2); 90^\circ (-y, x)$ $M' \underline{(-2, 2)}$ $N' \underline{(-2, 5)}$ $P' \underline{(2, 3)}$

B) $R(1, -1), S(1, -3), T(4, -2); 180^\circ (-x, -y)$ $R' \underline{(-1, 1)}$ $S' \underline{(-1, 3)}$ $T' \underline{(-4, 2)}$

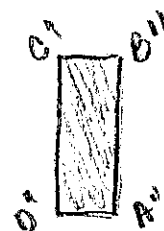
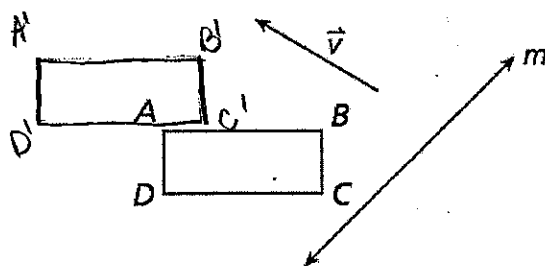
C) $A(-3, -9), B(6, -7), C(0, 2); 270^\circ (y, -x)$ $A' \underline{(-9, 3)}$ $B' \underline{(-7, 6)}$ $C' \underline{(2, 0)}$

6). Rotate each figure around point P based on the given angle.

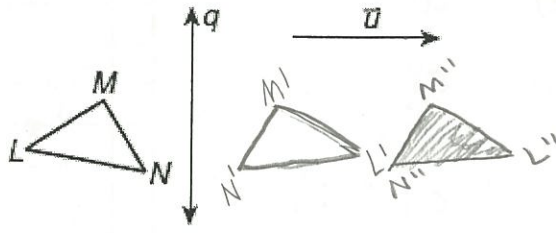


Draw the result of the composition of isometries.

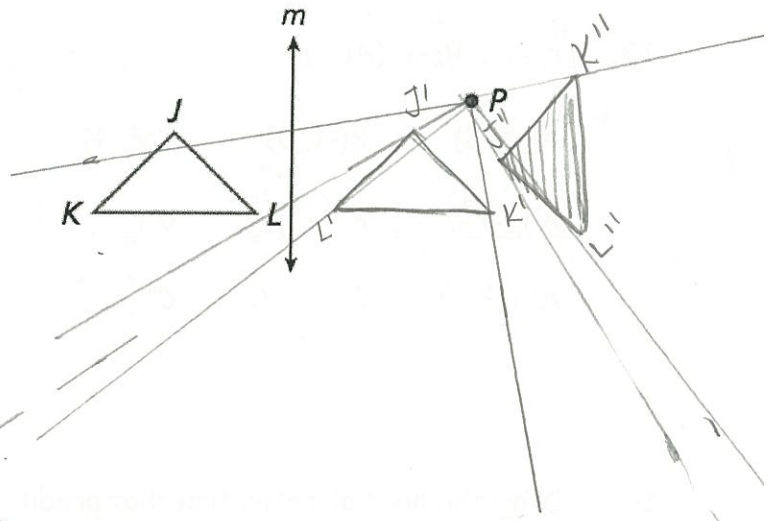
7). $r_{\text{line } m} \circ T_v(ABCD)$



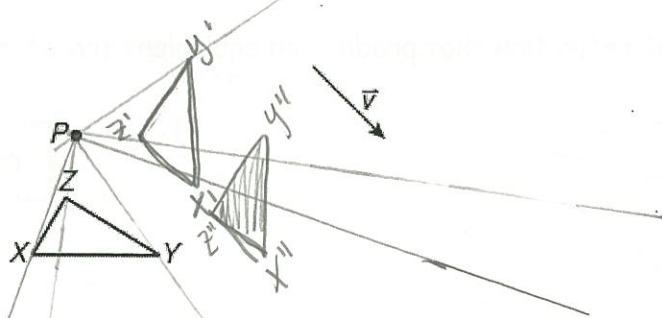
8). $T_u \circ r_{\text{line } q}$ (NML)



9). $R_{90^\circ} \circ r_{\text{line } m}$ (JKL)

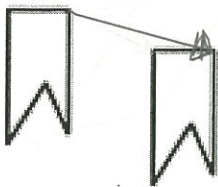


10). $T_v \circ R_{90^\circ}$ (XYZ)



11). Draw the vector along which the polygon is translated.

A) pre-image image



B) image pre-image



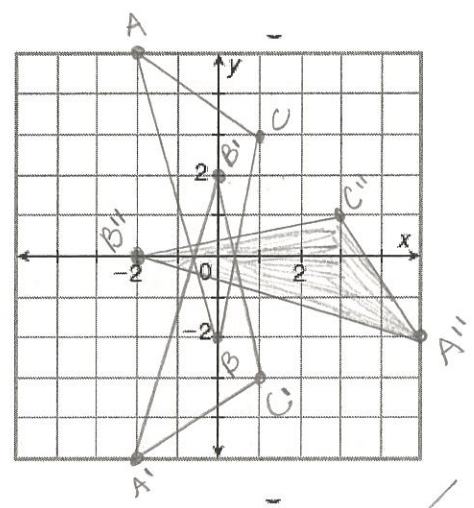
Chapter 12 Review

Name _____

12. R_{90° or $r_{x \text{ axis}}$ (ABC)

$(-y, x)$

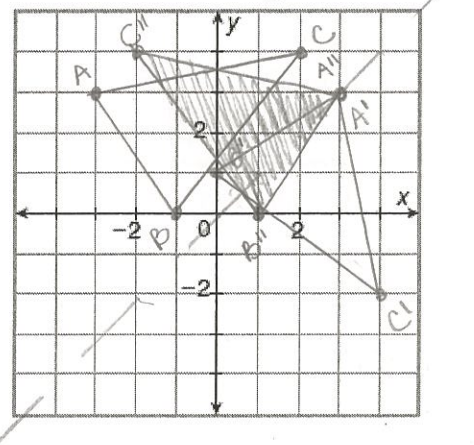
- A (-2, 5) B(0, -2) C(1, 3)
- A' (-2, -5) B'(0, 2) C'(1, -3)
- A'' (5, -2) B''(-2, 0) C''(3, 1)



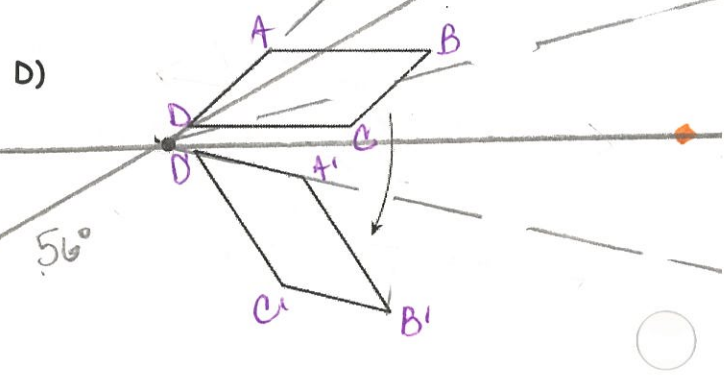
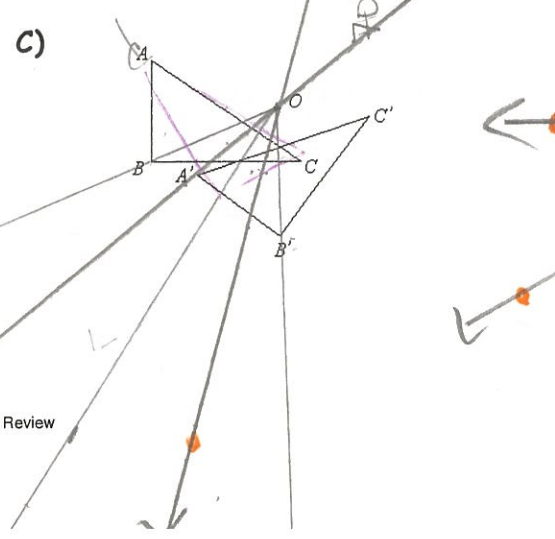
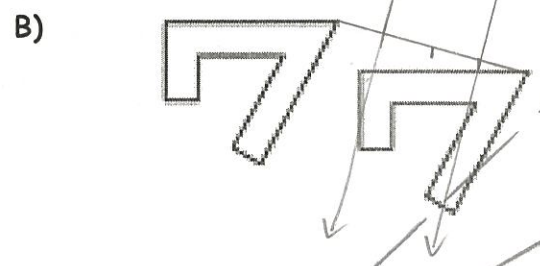
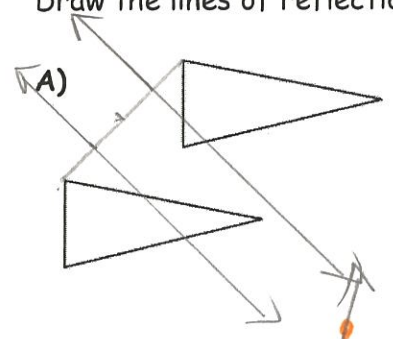
13. $r_{y=x}$ or R_{270° (ABC)

(y, x)

- A(-3, 3) B(-1, 0) C(2, 4)
- A' (3, 3) B' (0, 1) C' (4, -2)
- A'' (3, 3) B'' (1, 0) C'' (-2, 4)

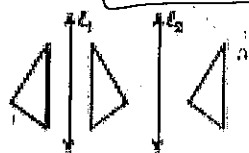


14. Draw the lines of reflection that produce an equivalent transformation



15. Give the magnitude of each translation.

A) -4 cm - 8 cm

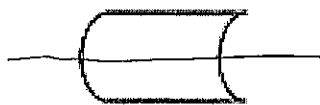


B) -- 10 in ---- 20 in

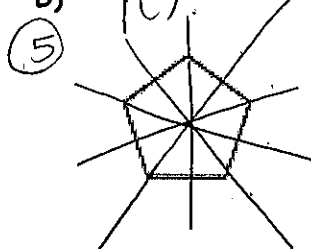


16. Tell whether each figure has line symmetry. If so, draw all lines of symmetry.

① A) Yes



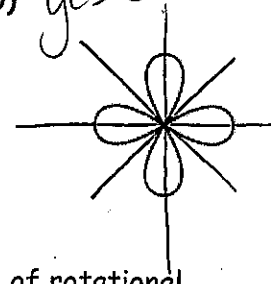
B) Yes



C) No



D) Yes ^(A)



17). Tell whether each figure has rotational symmetry. If so, give the angle of rotational symmetry and the order of symmetry.

A) Yes



order: 3

angle: 120°

B) Yes



order: 2

angle: 180°

C) Yes



order: 3

angle: 120°

D) Yes



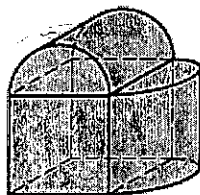
order: 4

angle: 90°

18). Tell whether each figure has plane symmetry, symmetry about an axis, neither, or both.

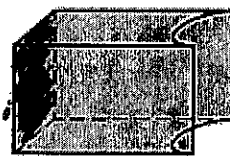
A)

plane



B)

Both



C)

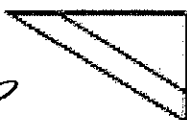
Both



19). Tell whether each transformation appears to be a dilation.

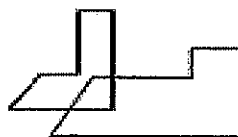
A)

Yes



B)

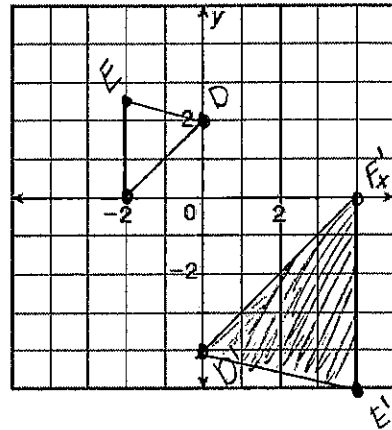
NO



20). Graph the figure and its image.

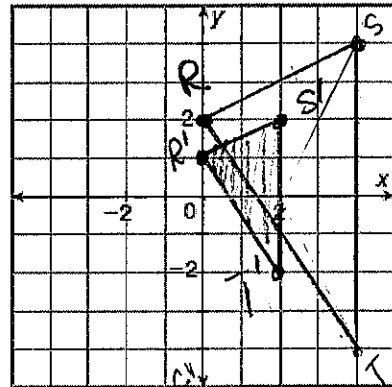
A) $D(0, 2), E(-2, 2.5), F(-2, 0)$; scale factor -2

$D'(0, -4) \quad E'(4, -5) \quad F'(4, 0)$



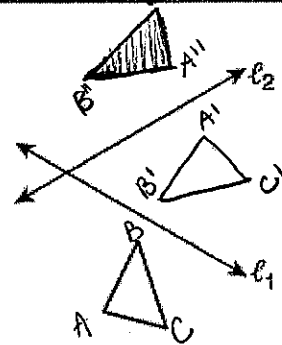
B) $R(0, 2), S(4, 4), T(4, -4)$; scale factor $1/2$

$R'(0, 1) \quad S'(2, 2) \quad T'(2, -2)$



21). Perform the composition of transformations.

① ②
 $r_{l_2} \circ r_{l_1}$ (triangle)

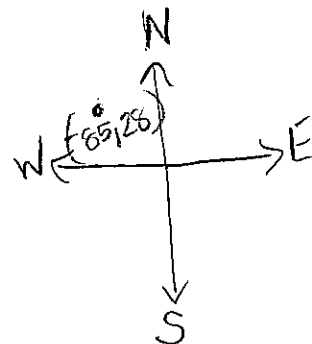


22). A sailboat has coordinates 85° west and 28° north. The boat sails 32° due west. Then the boat sails 45° due south.

(a) What is the boat's final position? $(-85, 28) + \langle -32, -45 \rangle = \boxed{(-117, -17)}$

(b) Give the vector that describes the move.

$\boxed{\langle -32, -45 \rangle}$

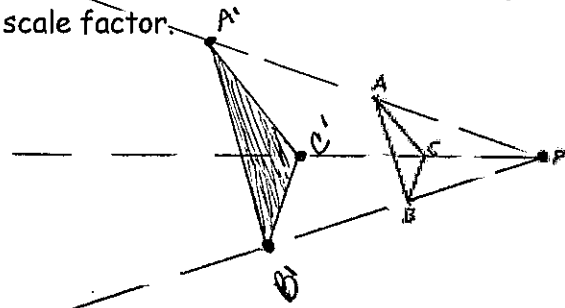


Chapter 12 Review

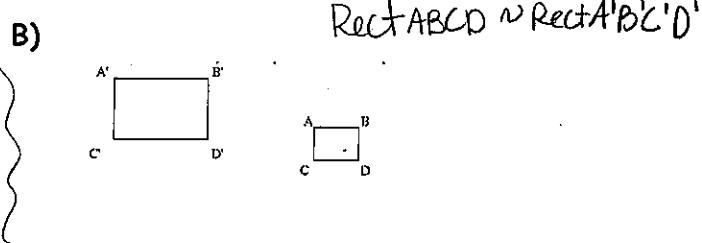
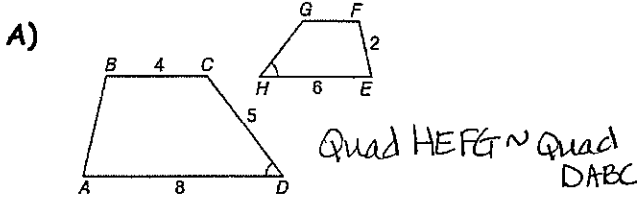
Name _____

23). Draw the image under a dilation with the given scale factor.

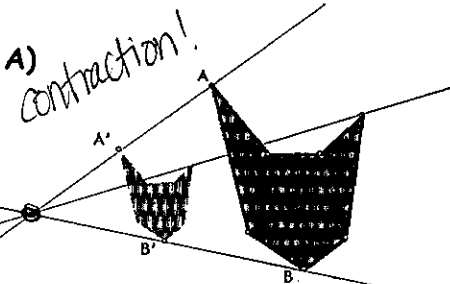
scale factor : 2



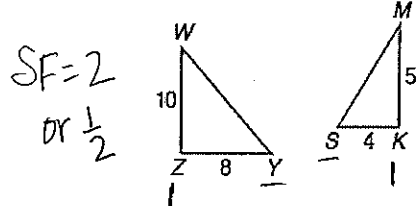
24). Write a similarity statement based on the following figures.



* 25). Find the center of each dilation and the scale factor.

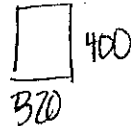


B) $\Delta yzw \sim \Delta KSM$



26). A blueprint shows a reduction of a room using a scale factor of 40. In the blueprint, the room's length is 8 inches and it's width is 10 inches. Find the perimeter of the room.

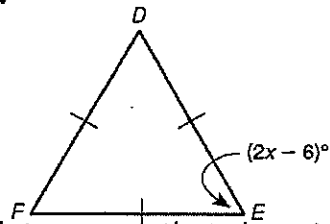
$8 \times 40 = 320$
 $10 \times 40 = 400$



$P = 2(320) + 2(400)$
 $= 640 + 800$
 $= 1440 \text{ in}$

Cumulative Review

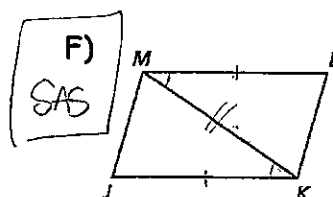
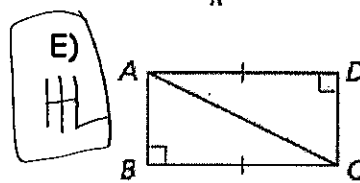
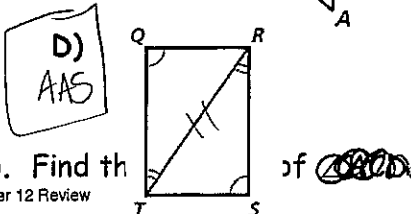
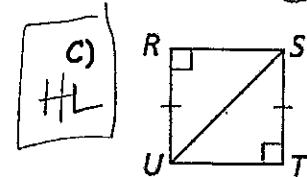
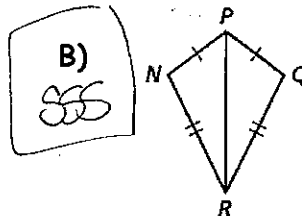
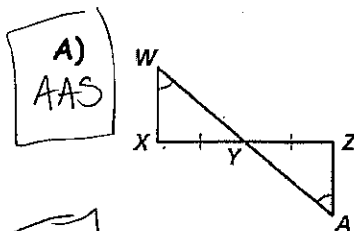
27). Find x



$3(2x-6) = 180$
 $6x - 18 = 180 \rightarrow 6x = 198 \rightarrow x = 33$

28). What postulate proves that the triangles are congruent? (SSS, ASA, AAS, SAS, HL)

NOT SSA
 AAA



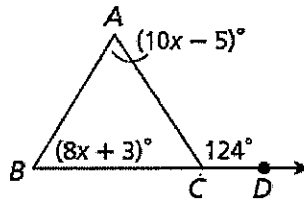
29). Find th

Chapter 12 Review

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$$m\angle ABC = 8(7) + 3$$

$$\boxed{59^\circ}$$



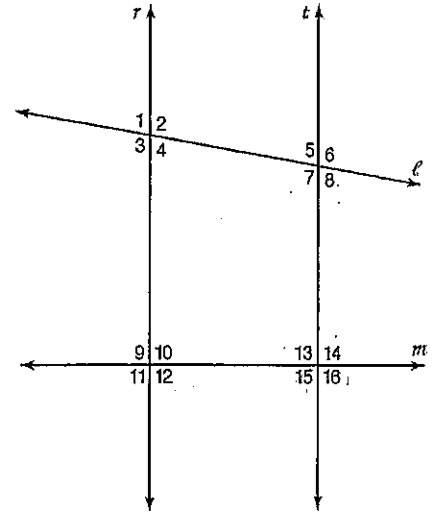
$$124 = 10x - 5 + 8x + 3$$

$$124 = 18x - 2$$

$$\begin{array}{r} +2 \\ \hline 126 = 18x \\ \frac{18}{18} \quad \frac{18}{18} \\ 7 = x \end{array}$$

30). Which are NOT each type of angle?

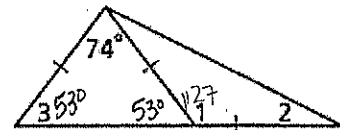
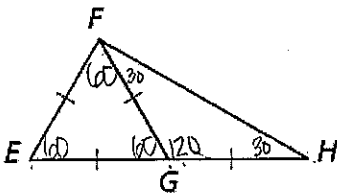
- B A) Alternate Interior
 a. $\angle 12$ & $\angle 13$ **b. $\angle 15$ & $\angle 7$** c. $\angle 4$ & $\angle 5$ d. $\angle 7$ & $\angle 14$
- A B) Corresponding
a. $\angle 1$ & $\angle 4$ b. $\angle 10$ & $\angle 2$ c. $\angle 16$ & $\angle 8$ d. $\angle 11$ & $\angle 3$
- D C) Same side interior
 a. $\angle 3$ & $\angle 9$ b. $\angle 12$ & $\angle 15$ c. $\angle 8$ & $\angle 14$ **d. $\angle 4$ & $\angle 5$**
- C D) Alternate exterior
 a. $\angle 1$ & $\angle 12$ b. $\angle 1$ & $\angle 8$ **c. $\angle 16$ & $\angle 11$** d. $\angle 16$ & $\angle 9$



31). Find the measure of the following angles.

- A) $m\angle EGF$ 60°
 B) $m\angle FHG$ 30°

- C) $m\angle 3$ 53°
 D) $m\angle 2$ 26.5°



$$\angle 3 = \frac{180 - 74}{2} = 53 \quad \left| \quad \angle 2 = \frac{180 - 127}{2} = 26.5$$