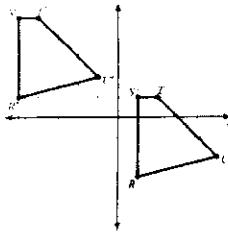
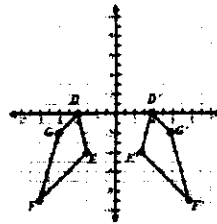


Unit 1 Transformations and Triangles Review

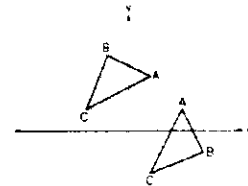
1. Write rules to describe these transformations. Use arrow notation for a and b.



a. _____



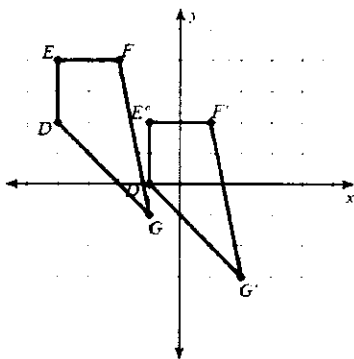
b. _____



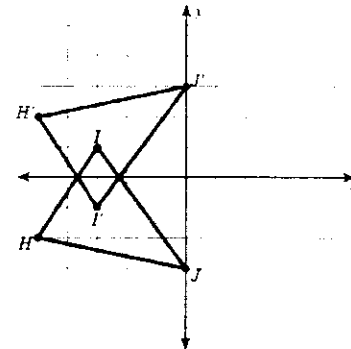
c. _____

2. The image of a translation, rotation, and reflections will be an isometry with the preimage. What does this mean? _____

3. _____



- A) reflection across $y = x$
- B) translation: $(x, y) \rightarrow (x + 3, y - 2)$
- C) translation: $(x, y) \rightarrow (x + 4, y - 2)$
- D) translation: $(x, y) \rightarrow (x + 6, y - 3)$



- A) translation: $(x, y) \rightarrow (x + 5, y - 2)$
- B) reflection across $y = x$
- C) reflection across the x-axis
- D) translation: $(x, y) \rightarrow (x + 3, y + 2)$

4. Write the rule for the following; then find the image:

Reflect across the line $y = x$ $(x, y) \rightarrow$ _____ $(-3, 5) \rightarrow$ _____

Reflect across the line $y = -x$ $(x, y) \rightarrow$ _____ $(-3, 5) \rightarrow$ _____

Reflect across the y-axis $(x, y) \rightarrow$ _____ $(-3, 5) \rightarrow$ _____

Translate 4 left and 4 up $(x, y) \rightarrow$ _____ $(-3, 5) \rightarrow$ _____

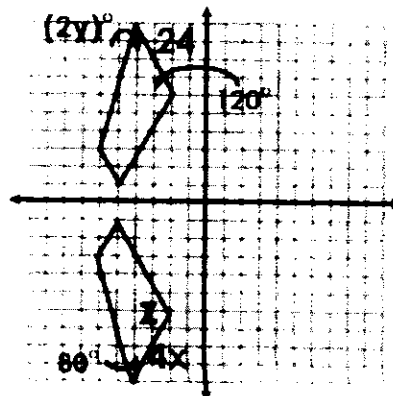
Translate 3 right and reflect x-axis $(x, y) \rightarrow$ _____ $(-3, 5) \rightarrow$ _____

5. Solve the isometry:

X = _____

Y = _____

Z = _____



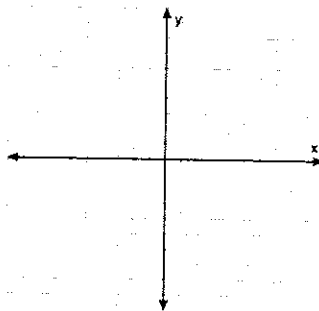
6. If the image of $(x,y) \rightarrow (x + 2, y - 3)$ is $A'(-5, -3)$, find the pre-image A. _____

If the image of $(x,y) \rightarrow (-x, y + 5)$ is $B'(-3,-6)$, find the pre-image B. _____

7. If point $M(-3,1)$ is reflected over the line $y = -3$ and translated according to the rule $(x,y) \rightarrow (-x, y + 6)$, plot point $M, M',$ and M'' . State the coordinates of M' and M'' .

M' _____

M'' _____

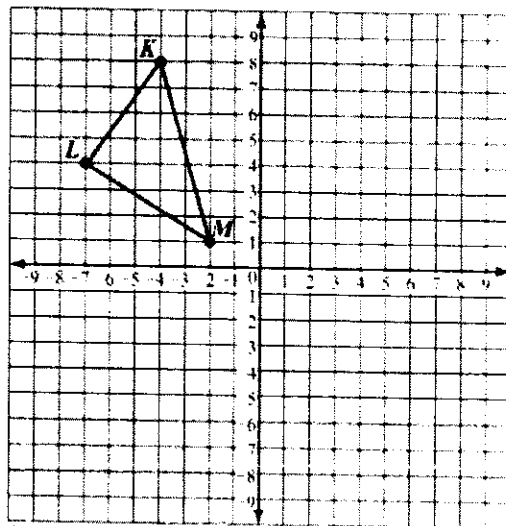


8. Graph the image of $\triangle KLM$ under the transformation rule $R_{90}(T_{-2,3})$. (Reminder R_{90} means rotate counterclockwise in the order of the quadrants and $T_{-2,3}$ means translate left 2 and up 3).

K' _____

L' _____

M' _____

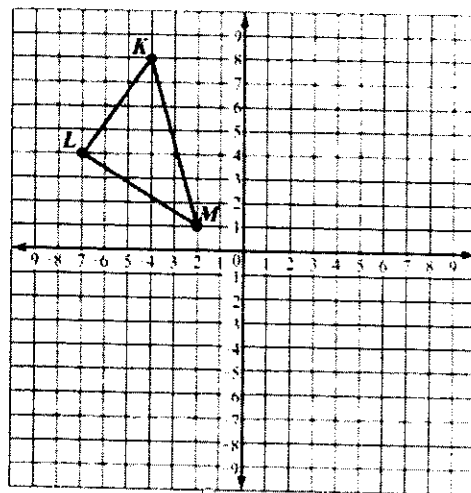


9. Rotate 90 CW about the origin then reflect across $y = -x$. List the final coordinates.

K'' _____

L'' _____

M'' _____

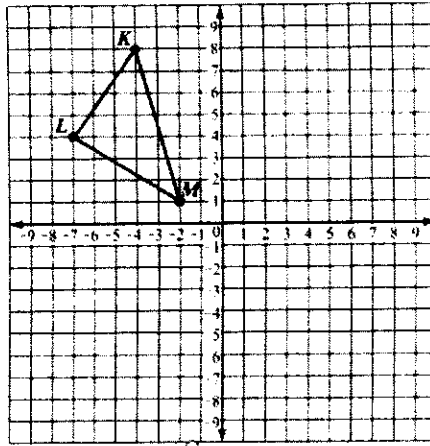


10. Rotate $\triangle KLM$ about the point $(2,-3)$. State the coordinates of the image.

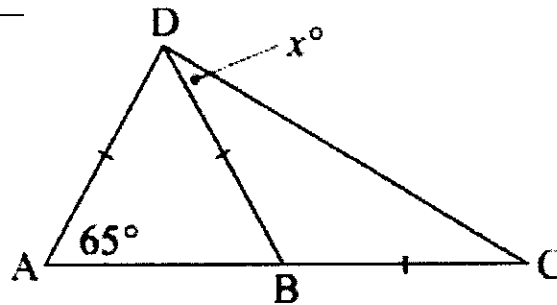
K' _____

L' _____

M' _____

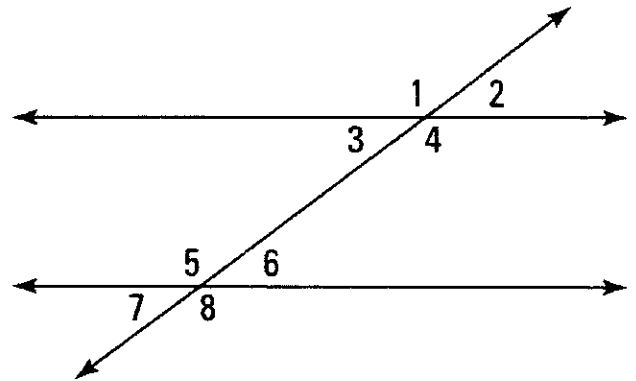


11. Solve for x. $x =$ _____



12. Multiple select. Given the parallel lines and transversal, CIRCLE all pairs of angles that are supplementary.

- a. 1 and 4
- b. 1 and 6
- c. 5 and 6
- d. 7 and 2
- e. 3 and 8
- f. 8 and 2

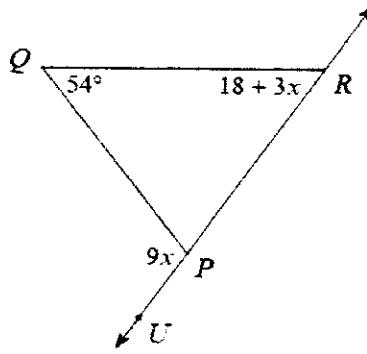


13. Using the diagram above #12: If $m\angle 3 = 4(x + 2)$ and $m\angle 6 = 3x + 14$, find $m\angle 7$.

14. Using the diagram above #12: If $m\angle 7 = \frac{1}{3}x + 8$ and $m\angle 3 = x$, solve for x.

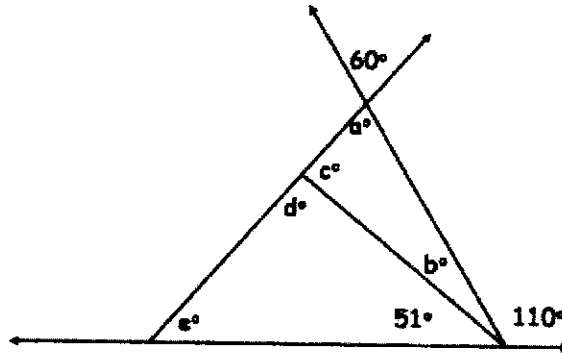
15. Solve for x.

x = _____



16. a = _____ b = _____ c = _____

d = _____ e = _____



17. If 2 alternate interior angles formed by 2 lines and a transversal are congruent, what must be true? Circle the correct answer.

- a. the lines cannot be parallel
- b. the lines must be parallel.
- c. we would need more information

18. If the angles in a triangle are $m\angle K = 45$, $m\angle L = 40$, and $m\angle M = 95$, list the side lengths from smallest to largest. *suggestion: draw triangle KLM and label the angles. Then list the segments in order.

19. Write an inequality that represents all possible values of the 3rd side of a triangle with the given side lengths:

4 and 7: _____

1 and 13: _____

20. Solve for x.

