

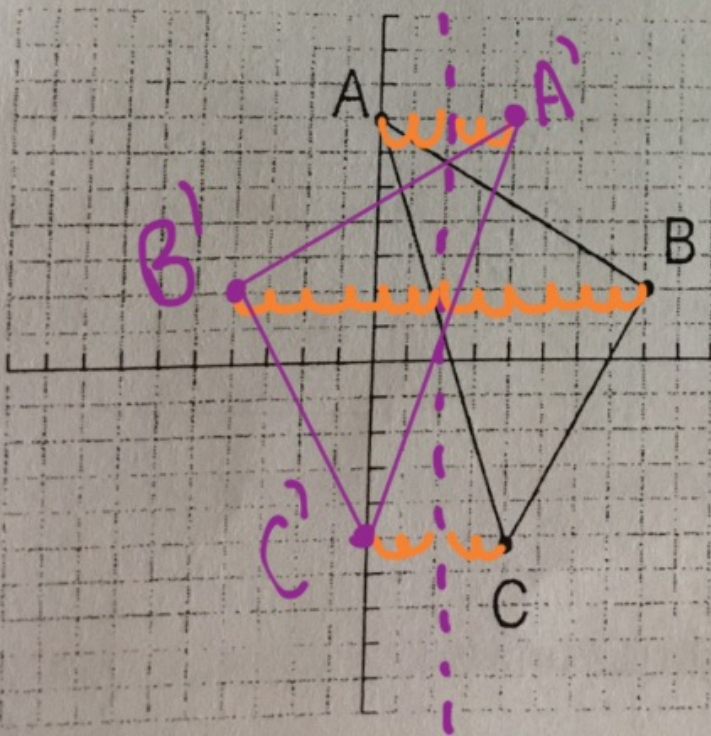
Quiz Review

Pages 28-29

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Reflect over the line $x = 2$ $x = \# \Rightarrow$ vertical line

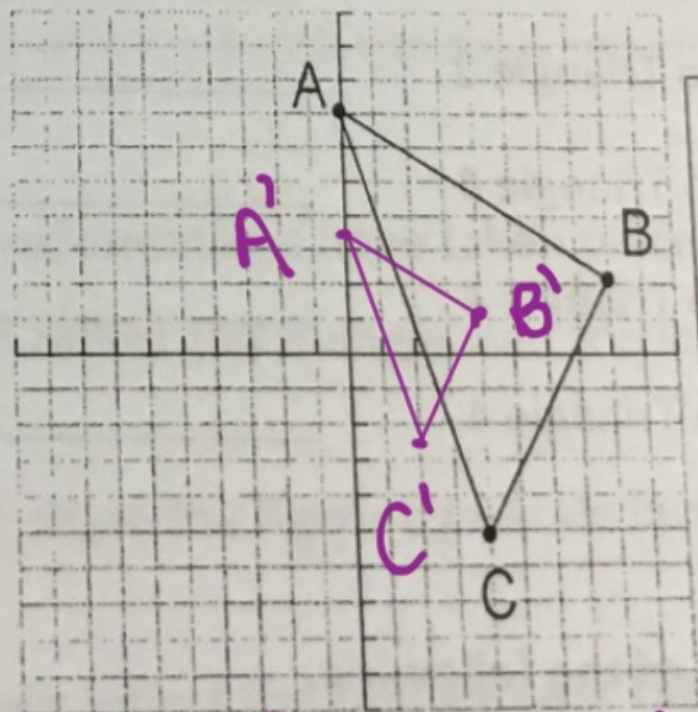


Notation:
 $R_{x=2}$

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2. Dilate with a scale factor $r = \frac{1}{2}$



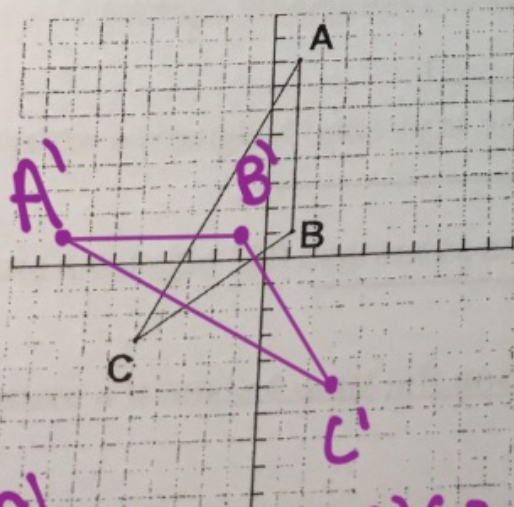
Algebraic Rule:
 $T: (x, y) \rightarrow (\frac{1}{2}x, \frac{1}{2}y)$

$A(0, 7) (\frac{1}{2}x, \frac{1}{2}y) A'(0, 3.5)$
 $B(8, 2) (\frac{1}{2}x, \frac{1}{2}y) B'(4, 1)$
 $C(4, -5) (\frac{1}{2}x, \frac{1}{2}y) C'(2, -2.5)$

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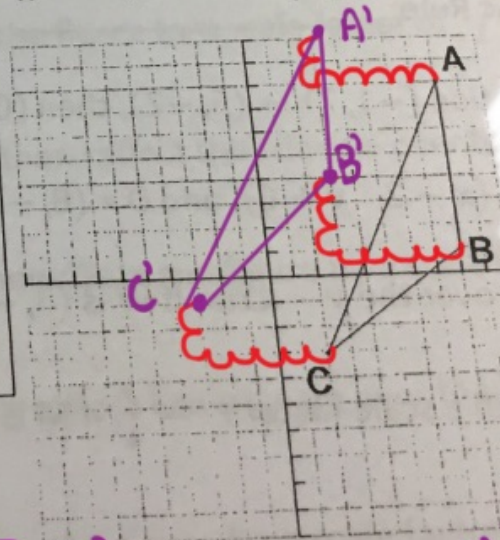


3. Rotate about the origin 90°
 Doesn't say direction so go counter clockwise



Algebraic Rule:
 $(-y, x)$
 Notation:
 R_{90°

4. Translate: $(x, y) \rightarrow (x - 5, y + 2)$



Vector Notation:
 $\langle -5, 2 \rangle$

$A(1, 8)$
 $B(1, 1)$
 $C(-5, -3)$

$(-y, x)$

$A'(-8, 1)$
 $B'(-1, 1)$
 $C'(3, -5)$

$A(8, 8)$
 $B(8, 1)$
 $C(2, -3)$


$(x - 5, y + 2)$

$A'(3, 10)$
 $B'(3, 3)$
 $C'(-3, -1)$

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<p>5. Reflect over the x - axis $(x, -y)$</p> <p>$(1, -5) \rightarrow (1, 5)$ $(-2, 4) \rightarrow (-2, -4)$ $(3, 0) \rightarrow (3, 0)$</p>	<p>6. Reflect over the line $y = x$</p> <p>(y, x)</p> <p>$(1, -5) \rightarrow (-5, 1)$ $(-2, 4) \rightarrow (4, -2)$ $(3, 0) \rightarrow (0, 3)$</p>	<p>7. Rotate 90° $(-y, x)$</p> <p>$(1, -5) \rightarrow (5, 1)$ $(-2, 4) \rightarrow (-4, -2)$ $(3, 0) \rightarrow (0, 3)$</p>
<p>8. Rotate 180° $(-x, -y)$</p> <p>$(1, -5) \rightarrow (-1, 5)$ $(-2, 4) \rightarrow (2, -4)$ $(3, 0) \rightarrow (-3, 0)$</p>	<p>9. Dilate with a scale factor of 3</p> <p>$(3x, 3y)$</p> <p>$(1, -5) \rightarrow (3, -15)$ $(-2, 4) \rightarrow (-6, 12)$ $(3, 0) \rightarrow (9, 0)$</p>	<p>10. $\langle 3, -4 \rangle$ right 3, down 4</p> <p>$(1, -5) \rightarrow (4, -9)$ $(-2, 4) \rightarrow (1, 0)$ $(3, 0) \rightarrow (6, -4)$</p>

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Math 2

Date _____

Unit 1 – Geometric Transformations

QUIZ REVIEW HOMEWORK

❖ State whether the isosceles triangle mapped to the other triangle is by a reflection, translation, or rotation

11. Triangle 1 to Triangle 5

reflection

12. Triangle 5 to Triangle 2

Rotation

13. Triangle 2 to Triangle 4

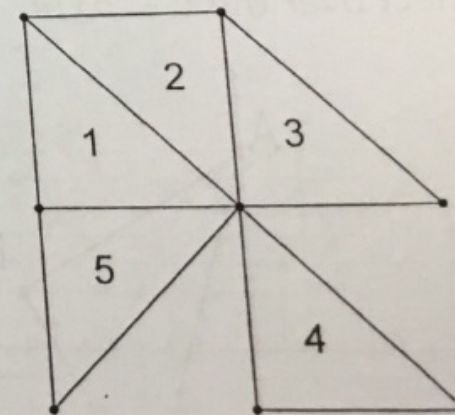
Rotation

14. Triangle 3 to Triangle 4

translation

15. Triangle 1 to Triangle 4

translation



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❖ Answer each of the following.

16. Describe the translation that maps all points down 7 units and right 12 units.

a) Algebraic Rule: $T: (x, y) \rightarrow (x+12, y-7)$ Vector: $\langle 12, -7 \rangle$

17. If the translation $(-1, 7) \rightarrow (5, -2)$, then $(0, 5) \rightarrow (6, -4)$

18. If $T: (x, y) \rightarrow (x - 2, y + 6)$, and $D' = (8, -1)$, find point D. $(10, -7)$

19. W is reflected over the y-axis. If W is $(3, -8)$, find W' . $(-3, -8)$

20. M is dilated with a scale factor $r = \frac{3}{4}$. If M is $(9, -3)$, find M' . $(6.75, -2.25)$

$9(3/4), -3(3/4)$

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21. Given *Regular Pentagon ABCDE* with center *O*.

a) *A* is rotated about *O*. If the image of *A* is *C*, what is the angle of rotation?

From A to C is 2 turns $\times 72 = 144^\circ$

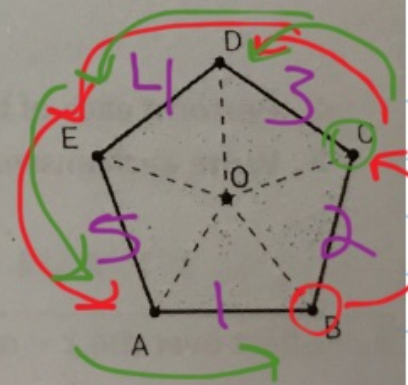
b) *E* is rotated about *O*. If the image of *E* is *A*, what is the angle of rotation?

From E to A 1 turn $\times 72 = 72^\circ$

c) \overline{BC} is rotated 288° about *O*. What is the image of \overline{BC} ?

$288/72 = 4$ turns

\overline{AB}



5 sides so $360/5 = 72^\circ$ per turn

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❖ Solve each system:

22. $y = -4x + 2$
 $x - y = 3$

$$x - (-4x + 2) = 3$$

$$x + 4x - 2 = 3$$

$$5x - 2 = 3$$

+2 +2

$$\frac{5x}{5} = \frac{5}{5}$$

$$x = 1$$

$$(1) - y = 3$$

$$1 - y = 3$$

-1 -1

$$-y = 2$$

-1 -1

$$y = -2$$

✓

Double-check & it works

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23. $11x + 4x + 5y = 9$
 $-4x + 11x + 9y = 20$

Elimination to avoid a bunch of fractions

~~$44x + 55y = 99$~~

~~$-44x - 36y = -80$~~

$\frac{19y}{19} = \frac{19}{19}$
 $y = 1$
✓

$4x + 5(1) = 9$
 $4x + 5 = 9$
 $\quad -5 \quad -5$
 $\frac{4x}{4} = \frac{4}{4}$
 $x = 1$
✓

Double-check & it works

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