

Review for Chapter 6

Name KEY
Review for Friday's Test/Quiz

Date _____

1. If the letter **P** is rotated 180 degrees, which is the resulting figure?

- 1) **d**
- 2) **p**
- 3) **P**
- 4) **b**

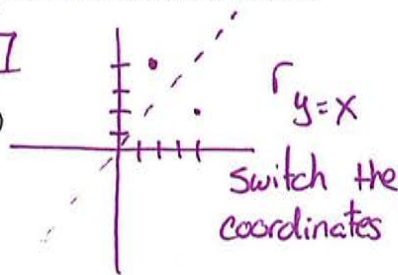
2. The image of point $(-2, 3)$ under translation T is $(3, -1)$. What is the image of point $(4, 2)$ under the same translation?

- 1) $(-1, 6)$
- 2) $(0, 7)$
- 3) $(5, 4)$
- 4) $(9, -2)$

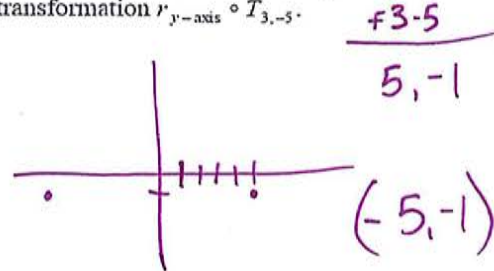
$$(x+5, y-4)$$

3. What is the image of point $A(4, 2)$ after the composition of transformations defined by $R_{90^\circ} \circ r_{y=x}$?

- 1) $(-4, 2)$
- 2) $(4, -2)$
- 3) $(-4, -2)$
- 4) $(2, -4)$



4. Find the coordinates of the image of $(2, 4)$ under the transformation $r_{y\text{-axis}} \circ T_{3, -5}$.

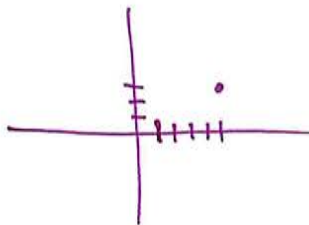


$$\frac{+3-5}{5, -1}$$

x-value changes signs

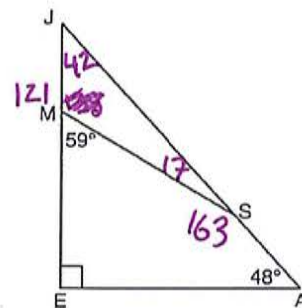
5. The transformation R_{90° maps point $(5, 3)$ onto the point whose coordinates are

- 1) $(5, -3)$
- 2) $(3, -5)$
- 3) $(3, 5)$
- 4) $(-3, 5)$



*switch x and y,
negate y*

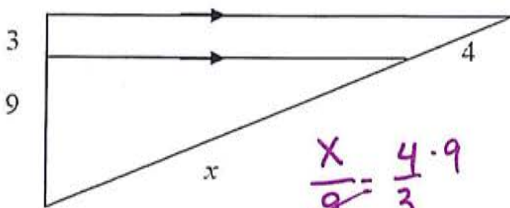
6. In the diagram of $\triangle JEA$ below, $m\angle JEA = 90$ and $m\angle EAJ = 48$. Line segment MS connects points M and S on the triangle, such that $m\angle EMS = 59$.



What is $m\angle JSM$?

- 1) 163
- 2) 121
- 3) 42
- 4) 17

7. Find the value of x .



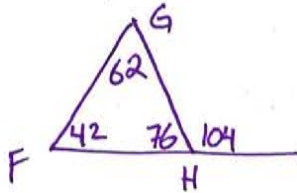
$$\frac{x}{9} = \frac{4 \cdot 9}{3}$$

$$x = 12$$

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8. In $\triangle FGH$, $m\angle F = 42$ and an exterior angle at vertex H has a measure of 104. What is $m\angle G$?

- 1) 34
- 2) 62
- 3) 76
- 4) 146

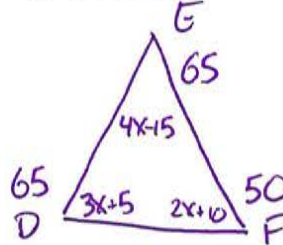


9. In $\triangle DEF$, $m\angle D = 3x + 5$, $m\angle E = 4x - 15$, and $m\angle F = 2x + 10$. Which statement is true?

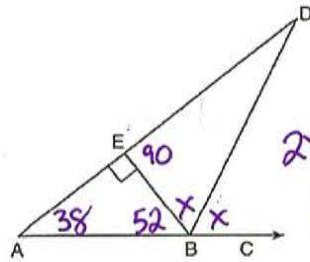
- 1) $DF = FE$
- 2) $DE = FE$
- 3) $m\angle E = m\angle F$
- 4) $m\angle D = m\angle F$

$$9x = 180$$

$$x = 20$$



10. The diagram below shows $\triangle ABD$, with $\overline{BC} \parallel \overline{AD}$, $\overline{BE} \perp \overline{AD}$, and $\angle EBD \cong \angle CBD$.



$$2x + 52 = 180$$

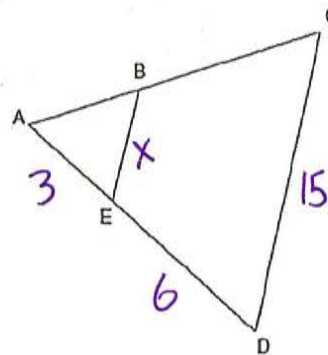
$$2x = 128$$

$$x = 64$$

If $m\angle ABE = 52$, what is $m\angle D$?

- 1) 26
- 2) 38
- 3) 52
- 4) 64

11. In the diagram below of $\triangle ACD$, E is a point on \overline{AD} and B is a point on \overline{AC} , such that $\overline{EB} \parallel \overline{DC}$. If $\overline{AE} = 3$, $\overline{ED} = 6$, and $\overline{DC} = 15$, find the length of \overline{EB} .



$$\frac{x}{3} = \frac{15 \cdot 3}{9}$$

$$x = 5$$

12. Use the diagram for the following (these are 3 separate problems):

a. $KR=12$, $RT=9$, $KS=16$. Find KT , SU , and KU

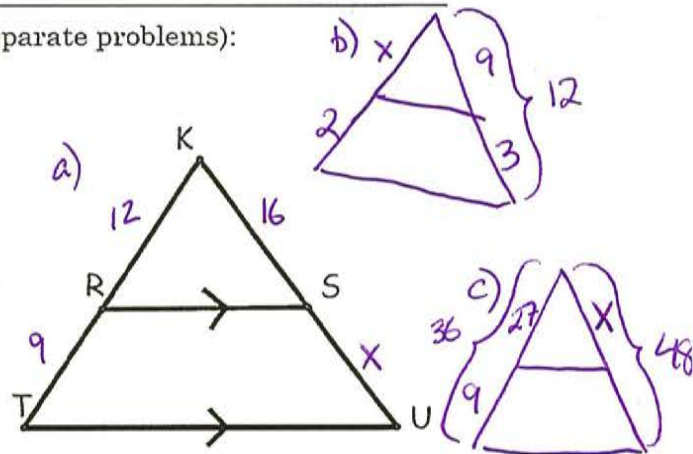
$$\frac{x}{16} = \frac{9 \cdot 12}{12} \quad x = 12$$

b. $RT=2$, $KS=9$, and $KU=12$. Find KR , KT , and SU .

$$\frac{x}{2} = \frac{9 \cdot 2}{3} \quad x = 6$$

c. $RT=9$, $KT=36$, and $KU=48$. Find KR , KS , and SU .

$$\frac{x}{27} = \frac{48 \cdot 27}{36} \quad x = 36$$



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13. The coordinates of the vertices of $\triangle ABC$ are $A(1, 3)$, $B(-2, 2)$ and $C(0, -2)$. On the grid below, graph and label $\triangle A''B''C''$, the result of the composite transformation $D_2 \circ T_{3, -2}$. State the coordinates of A'' , B'' , and C'' .

D AFTER T

$$T_{3, -2} (x+3, y-2)$$

$$A' (4, 1)$$

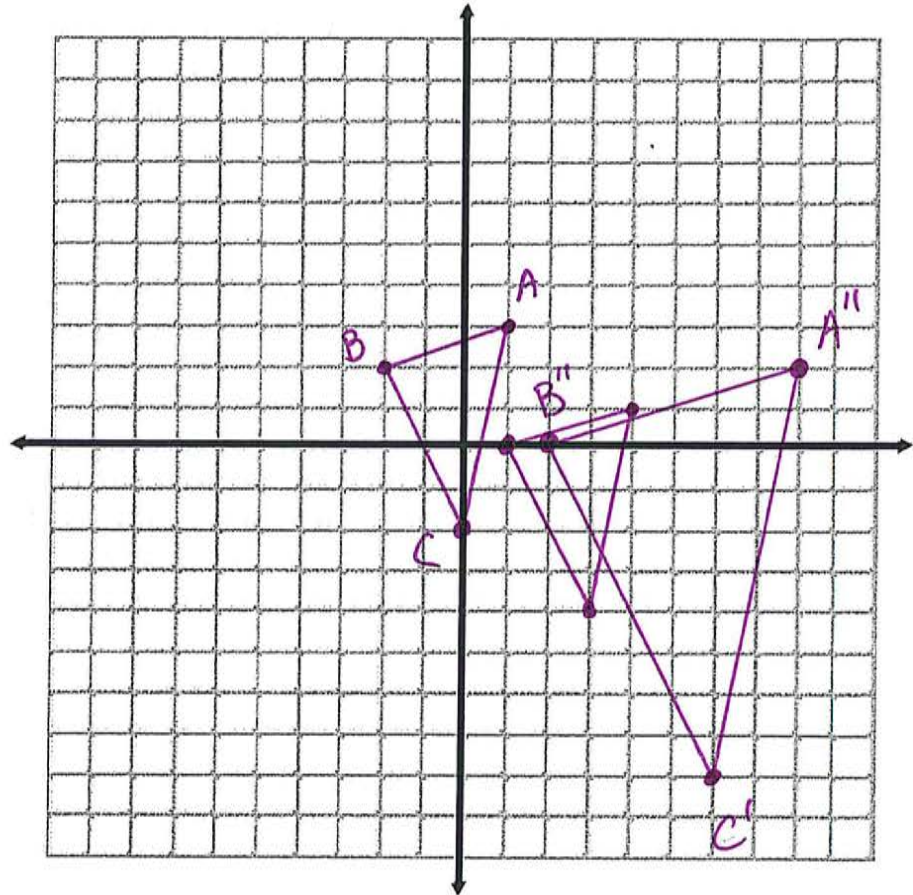
$$B' (1, 0)$$

$$C' (3, -4)$$

$$A'' (8, 2)$$

$$B'' (2, 0)$$

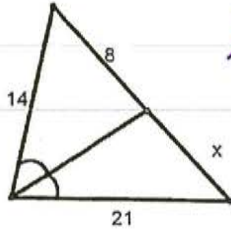
$$C'' (6, -8)$$



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Find the value of x:

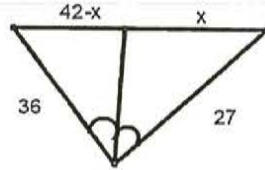
13.



$$\frac{x}{21} = \frac{8 \cdot 21}{14}$$

$$x = 12$$

14.



$$\frac{x}{27} = \frac{42-x}{36}$$

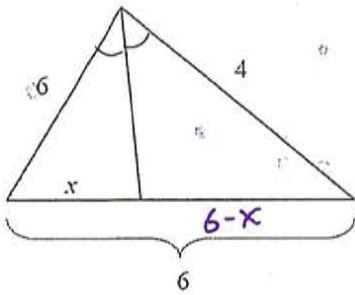
$$36x = 27(42-x)$$

$$36x = 1134 - 27x$$

$$63x = 1134$$

$$x = 18$$

15.



$$\frac{x}{6} = \frac{6-x}{4}$$

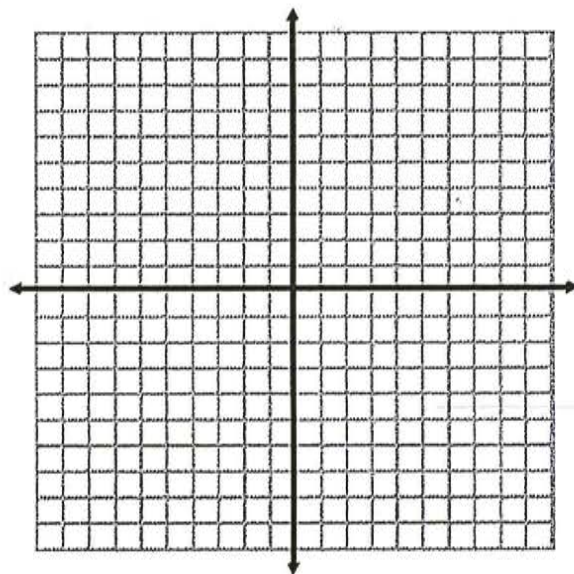
$$4x = 36 - 6x$$

$$10x = 36$$

$$x = 3.6$$

16. The coordinates of the vertices of $\triangle ABC$ are $A(1, 3)$, $B(-2, 2)$ and $C(0, -2)$. On the grid below, graph and label $\triangle A''B''C''$, the result of the composite transformation $D_2 \circ T_{3, -2}$. State the coordinates of A'' , B'' , and C'' .

Same as the 1st # 13

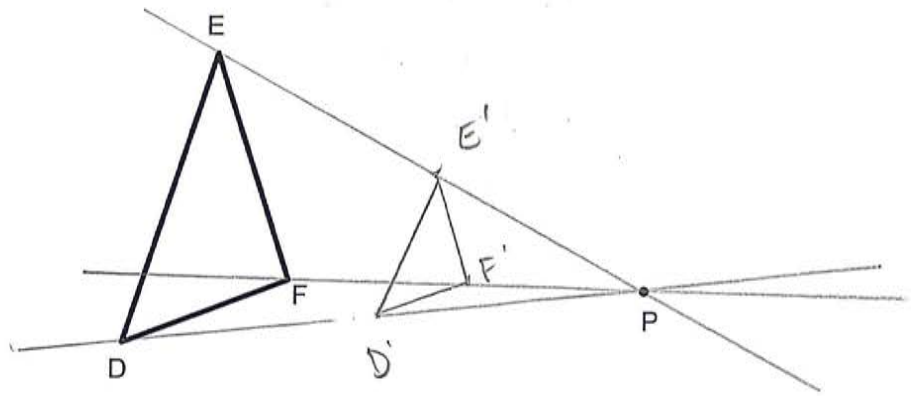


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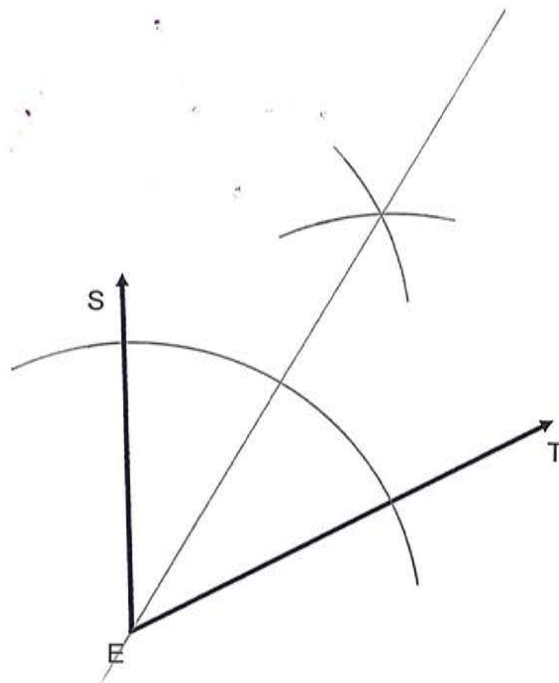
Use a compass for the two questions below:

14. Dilate the triangle below using a scale factor of $1/2$ and a center of P .

$$D_{P, 1/2}(\triangle DEF) = \triangle D'E'F'$$



15. Construct the angle bisector of the angle below. Name two congruent angles based on your construction.



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16. $\triangle ABC$ has vertices $A(2,-2)$, $B(5,-2)$, and $C(3,-4)$.
 a. On the set of axes given, graph and label $\triangle ABC$ and its image under each of the following transformations. State the coordinates of the vertices for each image of $\triangle ABC$.

(1) $T: (x,y) \rightarrow (-x,y)$ Reflection over the y -axis

(2) $U: (x,y) \rightarrow (x-4,y+4)$ Translation

(3) $W: (x,y) \rightarrow (2x,2y)$ Dilation

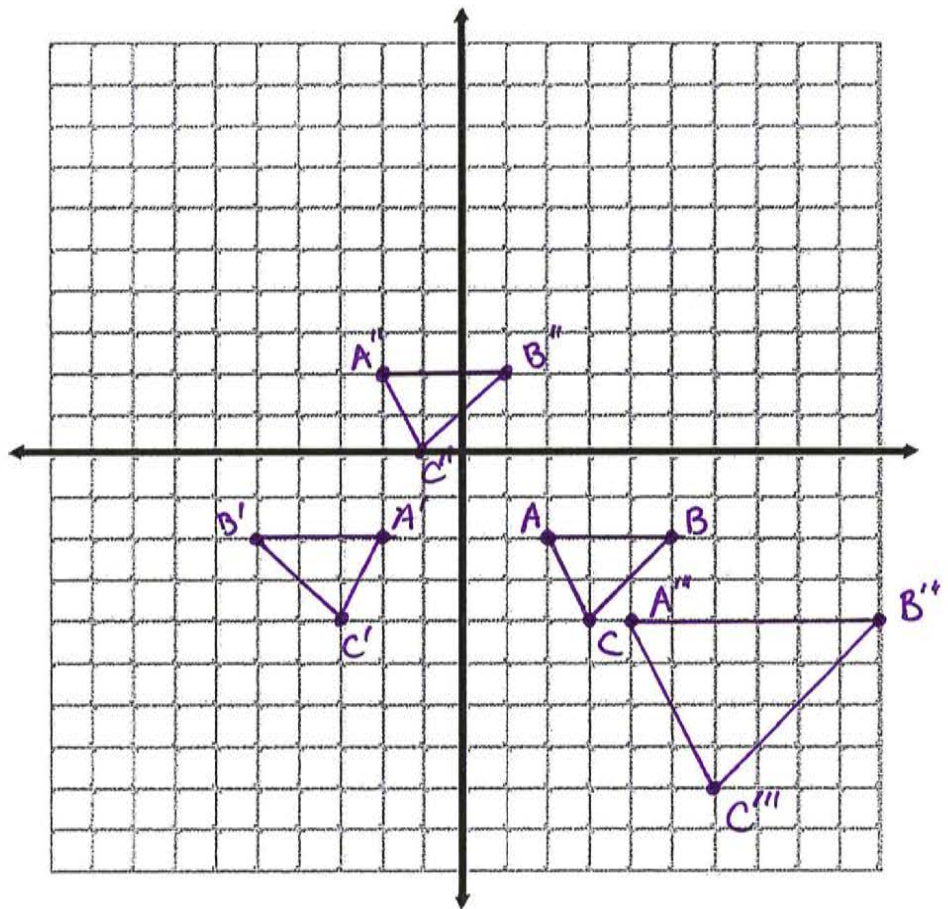
b. Which transformation, T , U , or W is *not* an isometry? W

c. Which transformation, T , U , or W , does *not* preserve orientation? T

1) $A'(-2,-2)$
 $B'(-5,-2)$
 $C'(-3,-4)$

2) $A''(-2, 2)$
 $B''(1,2)$
 $C''(-1,0)$

3) $A'''(4,-4)$
 $B'''(10,-4)$
 $C'''(6,-8)$



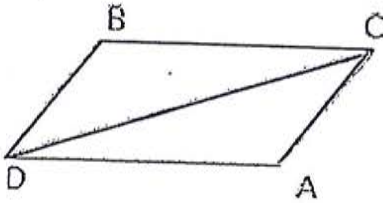
PROOF REVIEW PKT

Name: _____ Date: _____ Per: _____

1. Given: $\overline{BC} \cong \overline{AD}$

$\overline{AC} \cong \overline{BD}$

Prove: $\angle BCD \cong \angle ADC$



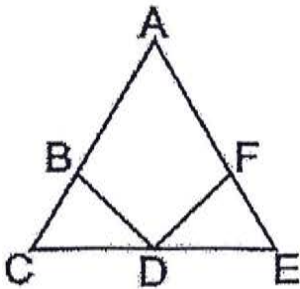
2. Given: $\triangle AEC$ is an isosceles triangle with

$\overline{AC} \cong \overline{AE}$

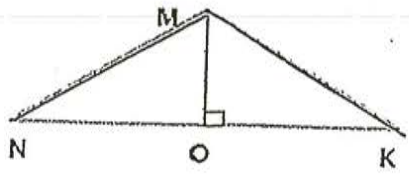
$\overline{AB} \cong \overline{AF}$

$\angle BDC \cong \angle FDE$

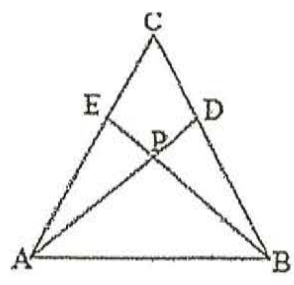
Prove: $\triangle CDB \cong \triangle FDE$



3. Given: $\overline{MO} \perp \overline{NK}$
 $\overline{NO} \cong \overline{KO}$
Prove: $\overline{NM} \cong \overline{KM}$

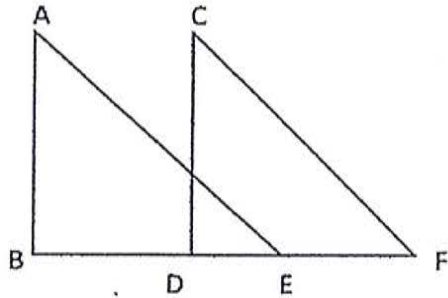


4. Given: $\overline{CA} \cong \overline{CB}$
 $\angle PAB \cong \angle PBA$
Prove: $\triangle EPA \cong \triangle DPB$

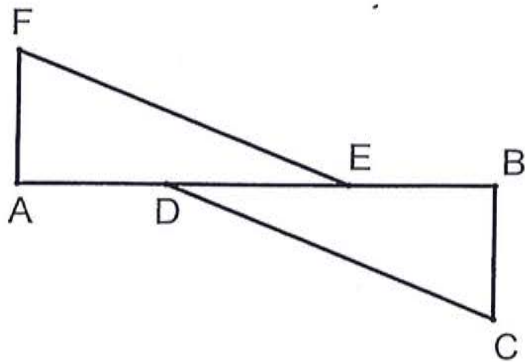


5. Given: $\overline{BD} \cong \overline{EF}$
 $\angle AEB \cong \angle CFD$
 $\overline{AB} \perp \overline{BE}$
 $\overline{CD} \perp \overline{DF}$

Prove: $\angle A \cong \angle C$



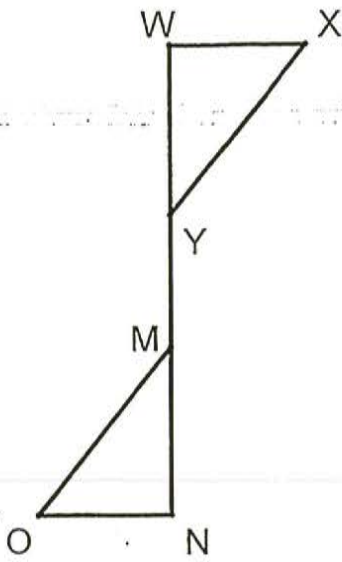
6.



- Given: $\overline{AF} \perp \overline{AB}$, $\overline{CB} \perp \overline{AB}$, $\overline{AD} \cong \overline{BE}$,
 $\overline{AF} \cong \overline{BC}$

Prove: $m\angle E = m\angle D$

7.



Given: $\overline{WN} \perp \overline{WX}$, $\overline{WN} \perp \overline{ON}$, $\overline{WM} \cong \overline{NY}$,
 $\overline{ON} \cong \overline{XW}$
Prove: $\overline{OM} \cong \overline{XY}$

8. Given: $RP = PT$, \overline{SP} is the altitude of $\triangle RST$
Prove: $\triangle SRP \cong \triangle STP$ and
 $\triangle RST$ is isosceles

