

Midterm Review
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1. Given: $\overline{EA} \perp \overline{AD}$; $\overline{GD} \perp \overline{AD}$
 $\overline{BD} \cong \overline{AC}$; $\angle EBA \cong \angle GCD$
 Prove: $\overline{EA} \cong \overline{GD}$

<p>CPCTC</p> <p>S</p> <p>R</p> <p>① $\overline{EA} \perp \overline{AD}$; $\overline{GD} \perp \overline{AD}$ $\overline{BD} \cong \overline{AC}$; $\angle EBA \cong \angle GCD$</p> <p>② $\angle 1 \cong \angle 2$ alt. \angle's</p> <p>③ $\angle 1 \cong \angle 2$</p> <p>④ $\overline{BC} \cong \overline{BC}$</p> <p>⑤ $\overline{AC} - \overline{BC} \cong \overline{DB} - \overline{BC}$ $\overline{AB} \cong \overline{CD}$</p> <p>⑥ $\triangle EAB \cong \triangle GDC$</p> <p>⑦ $\overline{EA} \cong \overline{GD}$</p>	<p>① Given</p> <p>② \perp lines form right \angle's</p> <p>③ All right \angle's are \cong</p> <p>④ Reflexive property</p> <p>⑤ Subtraction Postulate</p> <p>⑥ ASA \cong ASA</p> <p>⑦ CPCTC</p>
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2. For what value of x is line a parallel to line b

if ~~lines are not parallel~~ \rightarrow ~~lines are parallel~~

$$4x - 9 = 2x + 33$$

$$2x = 42$$

$$x = 21$$

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3. Find the measure of $\angle ACE$.

consec. adj. \angle 's on a line sum to 180

$$69 + 26 = 95$$

$$180 - 95 = 85$$

$$\angle ACE = 62^\circ$$

$$85 + 33 + x = 180$$

$$118 + x = 180$$

$$\underline{-118} \quad \underline{-118}$$

$$x = 62^\circ$$

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4. The ratio of the measure of the angles of a triangle is 3:4:5. What type of triangle is it?

$$3x + 4x + 5x = 180$$

$$12x = 180$$

$$x = 15$$

$$3(15) = 45^\circ$$

$$4(15) = 60^\circ$$

$$5(15) = 75^\circ$$

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Rigid Motion

- Preserves Measure & Distance
- Reflections (does not preserve orientation)
- Rotations
- Translations

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5. If $\overline{MN} \parallel \overline{JK}$ then $JK =$ 64

$$\frac{12}{16} = \frac{48}{x}$$

$$\frac{12x}{12} = \frac{768}{12}$$

$$x = 64$$

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6. Construct a regular hexagon in circle O.

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7. a. Given: $\overline{AB} \parallel \overline{CD}$
 $\overline{AB} \cong \overline{CD}$
 Prove: $\overline{AD} \cong \overline{BC}$

b. What sequence of rigid motions would map triangle ABC onto triangle CDA?

Rotation & a translation

① $\overline{AB} \parallel \overline{CD}$ $\overline{AB} \cong \overline{CD}$ ② $\angle BAC \cong \angle DCA$ ③ $\overline{AC} \cong \overline{AC}$ ④ $\triangle BAC \cong \triangle DCA$ ⑤ $\overline{AD} \cong \overline{BC}$	① Given ② if $\parallel \rightarrow \parallel$ ③ Reflexive Property ④ SAS \cong SAS ⑤ CPCTC
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Transformation

8. What ~~rigid motion~~ preserves angle measure but does not preserve distance? *Dilation*

9. Define altitude:

A line drawn from a vertex \perp to the opposite side

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10. Construct a 30° angle.

(1) construct an equilateral \triangle
 (2) bisect an \angle

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11. Find the image of $(-8, 3)$ under each transformation:

- Reflection over the line $y = x$ $(3, -8)$
- Reflection in the x-axis $(-8, -3)$
- Rotation of 90° about the origin $(-3, -8)$
- Translation $T_{6,12}$ $(-2, 15)$
- Rotation of 180° about the origin $(8, -3)$
- Reflection over the y-axis $(8, 3)$

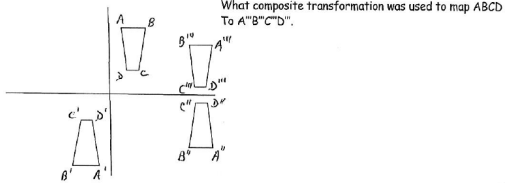
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12. Name all abbreviations used to prove triangles congruent.

SAS, ASA, SSS, AAS, HL

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13.



What composite transformation was used to map ABCD To A''B''C''D''.

Rotation 180°, Translation x units to the and y units up, reflection over the x-axis

$$((T_{x,y} (R_{180^\circ} ABCD)))$$

↑ counter clockwise about the origin

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