

Name: ANSWERS

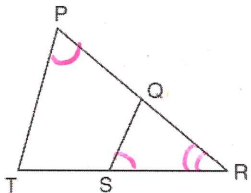
Monica

Geometry Period: \_\_\_\_\_

Date: \_\_\_\_\_

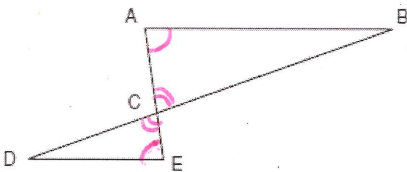
**Directions:** Answer all of the questions below. Write your answers in simplest form whenever necessary. Be sure to show all of your work.

1) In the diagram below of  $\triangle PRT$ ,  $Q$  is a point on  $\overline{PR}$ ,  $S$  is a point on  $\overline{TR}$ ,  $\overline{QS}$  is drawn, and  $\angle RPT \cong \angle RSQ$ . Which reason justifies the conclusion that  $\triangle PRT \sim \triangle SRQ$ ?



- 1) AA
- 2) ASA
- 3) SAS
- 4) SSS

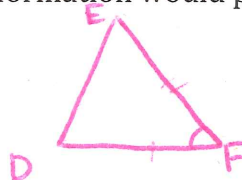
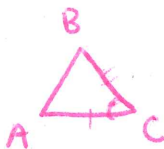
2) In the diagram of  $\triangle ABC$  and  $\triangle EDC$  below,  $\overline{AE}$  and  $\overline{BD}$  intersect at  $C$ , and  $\angle CAB \cong \angle CED$ . Which method can be used to show that  $\triangle ABC$  must be similar to  $\triangle EDC$ ?



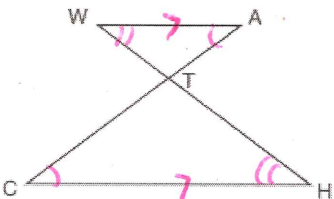
- 1) SAS
- 2) AA
- 3) SSS
- 4) HL

3) In  $\triangle ABC$  and  $\triangle DEF$ ,  $\frac{AC}{DF} = \frac{CB}{FE}$ . Which additional information would prove  $\triangle ABC \sim \triangle DEF$ ?

- 1)  $AC = DF$
- 2)  $CB = FE$
- 3)  $\angle ACB \cong \angle DFE$
- 4)  $\angle BAC \cong \angle EDF$

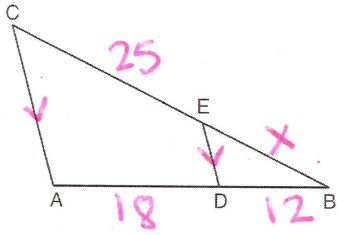


4) In the accompanying diagram,  $\overline{WA} \parallel \overline{CH}$  and  $\overline{WH}$  and  $\overline{AC}$  intersect at point  $T$ . Prove that  $(WT)(CT) = (HT)(AT)$ .



Statements	Reasons
1. $\overline{WA} \parallel \overline{CH}$	1. Given
2. $\angle A \cong \angle C$	2. Alt. int. $\Delta$ s are $\cong$
3. $\angle W \cong \angle H$	3. Alt. int. $\Delta$ s are $\cong$
4. $\triangle WAT \sim \triangle HCT$	4. AA $\sim$
5. $\frac{WT}{AT} = \frac{HT}{CT}$	5. Corresponding parts of similar triangles are proportional
6. $(WT)(CT) = (HT)(AT)$	6. Cross multiply

- 5) In the diagram below of  $\triangle ABC$ ,  $D$  is a point on  $\overline{AB}$ ,  $E$  is a point on  $\overline{BC}$ ,  $\overline{AC} \parallel \overline{DE}$ ,  $CE = 25$  inches,  $AD = 18$  inches, and  $DB = 12$  inches. Find, to the nearest tenth of an inch, the length of  $\overline{EB}$ .

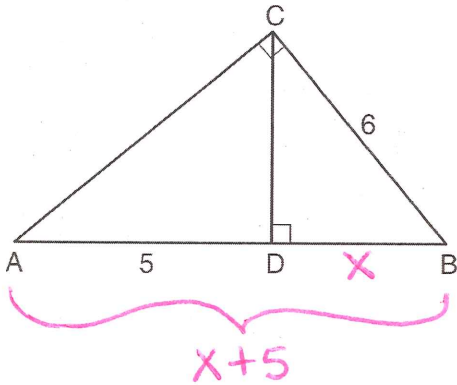


$$\frac{25}{x} = \frac{18}{12}$$

$$18x = 300$$

$$x = 16.7$$

- 6) In the diagram below of right triangle  $ABC$ ,  $\overline{CD}$  is the altitude to hypotenuse  $\overline{AB}$ ,  $CB = 6$ , and  $AD = 5$ . What is the length of  $\overline{BD}$ ?



$$\frac{x}{6} = \frac{6}{x+5}$$

$$x(x+5) = 36$$

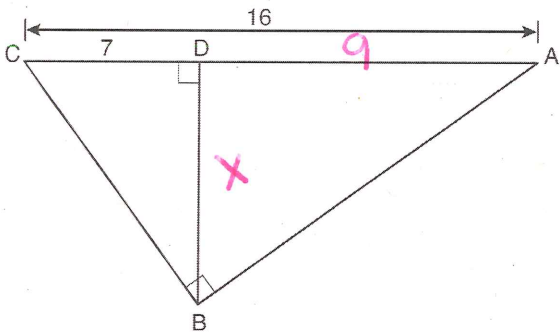
$$x^2 + 5x - 36 = 0$$

$$(x+9)(x-4) = 0$$

$$x = -9 \quad x = 4$$

$$DB = 4$$

- 7) In the diagram below of right triangle  $ABC$ , altitude  $\overline{BD}$  is drawn to hypotenuse  $\overline{AC}$ ,  $AC = 16$ , and  $CD = 7$ . What is the length of  $\overline{BD}$ ?



$$\frac{7}{x} = \frac{x}{9}$$

$$x^2 = 63$$

$$x = \sqrt{63}$$

$$x = 3\sqrt{7}$$