

Which do I use?

Date \_\_\_\_\_ Period \_\_\_\_\_

**Identify which law to use and then Solve each triangle. Round your answers to the nearest tenth.**

1) In  $\triangle XYZ$ ,  $y = 19$  yd,  $z = 25$  yd,  $m\angle X = 120^\circ$

$$m\angle Y = 25.5^\circ, m\angle Z = 34.5^\circ, x = 38.2 \text{ yd}$$

2) In  $\triangle ZXY$ ,  $z = 18.2$  cm,  $x = 9.1$  cm,  $y = 12.2$  cm

$$m\angle Z = 116.7^\circ, m\angle X = 26.5^\circ, m\angle Y = 36.8^\circ$$

3) In  $\triangle ZXY$ ,  $x = 23$  in,  $z = 11$  in,  $y = 21$  in

$$m\angle Z = 28.5^\circ, m\angle X = 85.9^\circ, m\angle Y = 65.6^\circ$$

4) In  $\triangle HPK$ ,  $m\angle H = 116^\circ$ ,  $k = 28$  cm,  $h = 22$  cm

Not a triangle

5) In  $\triangle ABC$ ,  $m\angle A = 123^\circ$ ,  $m\angle B = 34^\circ$ ,  $c = 14$  km

$$m\angle C = 23^\circ, a = 30 \text{ km}, b = 20 \text{ km}$$

6) In  $\triangle STR$ ,  $m\angle S = 47^\circ$ ,  $r = 35$  yd,  $s = 34$  yd

$$m\angle T = 84.2^\circ, m\angle R = 48.8^\circ, t = 46.3 \text{ yd}$$

$$\text{Or } m\angle T = 1.8^\circ, m\angle R = 131.2^\circ, t = 1.5 \text{ yd}$$

7)  $b = 29$  in,  $c = 30$  in,  $a = 15$  in

$$m\angle C = 79^\circ, m\angle A = 29.4^\circ, m\angle B = 71.6^\circ$$

8)  $b = 18$  m,  $a = 25$  m,  $c = 10$  m

$$m\angle B = 36.7^\circ, m\angle C = 19.4^\circ, m\angle A = 123.9^\circ$$

9)  $a = 17.5$  in,  $c = 22.9$  in,  $b = 24.7$  in

$$m\angle C = 63.1^\circ, m\angle A = 42.9^\circ, m\angle B = 74^\circ$$

10) In  $\triangle QRP$ ,  $m\angle Q = 138^\circ$ ,  $m\angle R = 9^\circ$ ,  $q = 43$  cm

$$m\angle P = 33^\circ, p = 35 \text{ cm}, r = 10.1 \text{ cm}$$

11) In  $\triangle ZXY$ ,  $m\angle Z = 85^\circ$ ,  $y = 34$  ft,  $z = 4$  ft

Not a triangle

12) In  $\triangle RPQ$ ,  $m\angle P = 78^\circ$ ,  $r = 22$  cm,  $p = 29$  cm

$$m\angle R = 47.9^\circ, m\angle Q = 54.1^\circ, q = 24 \text{ cm}$$