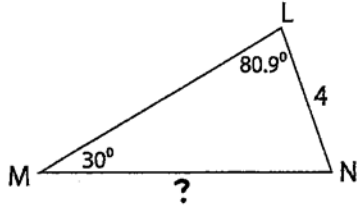


Name: KEY

**Missing Sides**

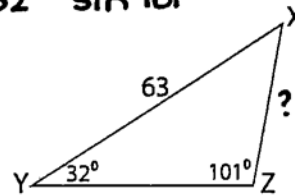
Find the measure of each indicated side. Round your answer to the nearest tenth.

1)  $\frac{?}{\sin 80.9^\circ} = \frac{4}{\sin 30^\circ}$



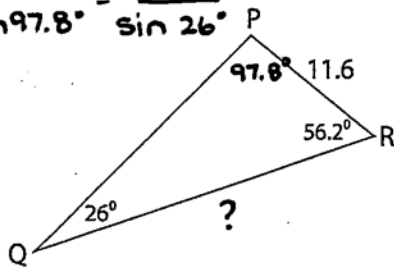
MN = 7.9

2)  $\frac{?}{\sin 32^\circ} = \frac{63}{\sin 101^\circ}$



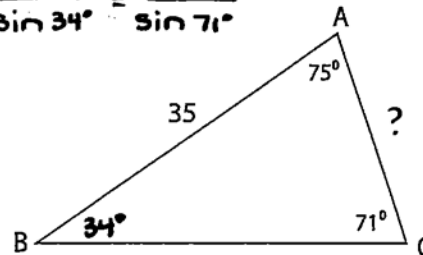
XZ = 34.0

3)  $\frac{?}{\sin 97.8^\circ} = \frac{11.6}{\sin 26^\circ}$



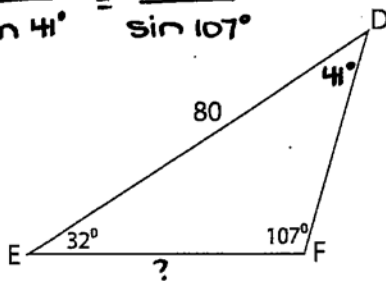
QR = 26.2

4)  $\frac{?}{\sin 34^\circ} = \frac{35}{\sin 71^\circ}$



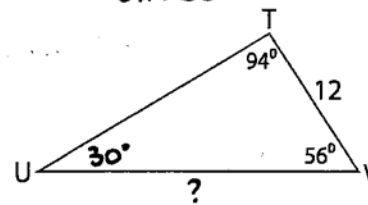
AC = 20.7

5)  $\frac{?}{\sin 41^\circ} = \frac{80}{\sin 107^\circ}$



EF = 54.9

6)  $\frac{?}{\sin 94^\circ} = \frac{12}{\sin 30^\circ}$

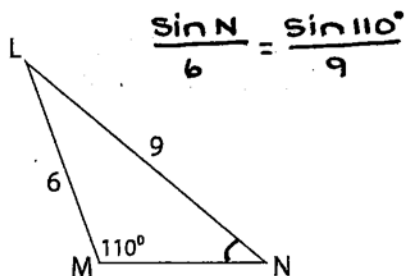


UV = 23.9

## Unknown Angles

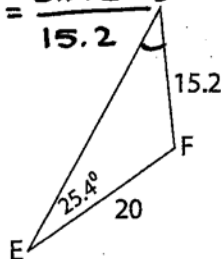
Find the measure of each indicated angle. Round your answer to the nearest tenth.

1)



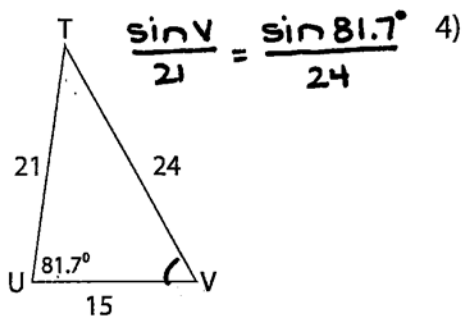
$$\angle N = \underline{38.8^\circ}$$

2) 
$$\frac{\sin D}{20} = \frac{\sin 25.8^\circ}{15.2}$$



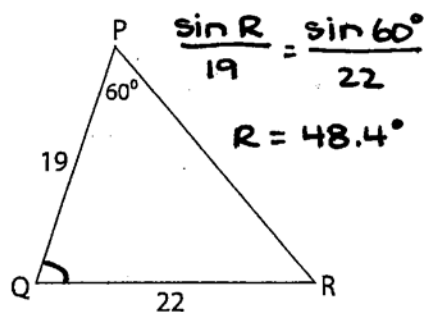
$$\angle D = \underline{34.4^\circ}$$

3)



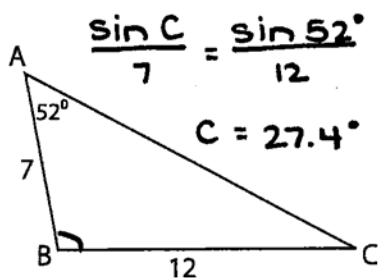
$$\angle V = \underline{60.0^\circ}$$

4)



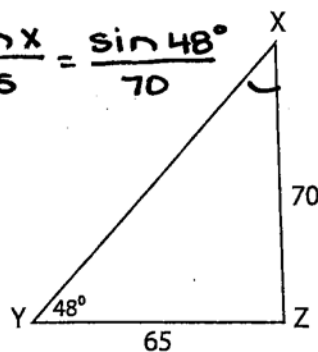
$$\angle Q = \underline{71.6^\circ}$$

5)



$$\angle B = \underline{100.6^\circ}$$

6) 
$$\frac{\sin X}{65} = \frac{\sin 48^\circ}{70}$$



$$\angle X = \underline{43.6^\circ}$$

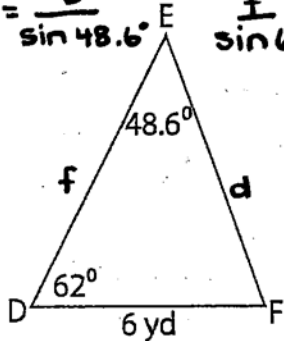
Name: \_\_\_\_\_

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## Solving Triangles

Solve each triangle from the given measurements. Round your answer to the nearest tenth.

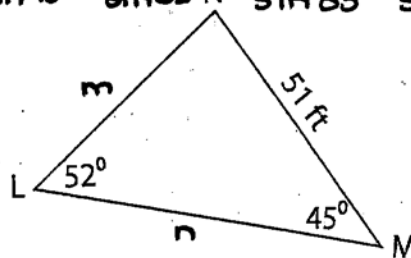
1)  $\frac{d}{\sin 62^\circ} = \frac{6}{\sin 48.6^\circ}$      $\frac{f}{\sin 69.4^\circ} = \frac{6}{\sin 48.6^\circ}$     2)  $\frac{m}{\sin 45^\circ} = \frac{51}{\sin 52^\circ}$      $\frac{n}{\sin 83^\circ} = \frac{51}{\sin 52^\circ}$



$\angle F = \underline{69.4^\circ}$

$d = \underline{7.1 \text{ yd}}$

$f = \underline{7.5 \text{ yd}}$

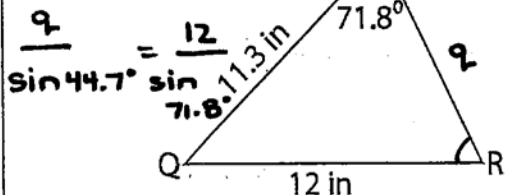


$\angle N = \underline{83^\circ}$

$m = \underline{45.8 \text{ ft}}$

$n = \underline{64.2 \text{ ft}}$

3)  $\frac{\sin R}{11.3} = \frac{\sin 71.8^\circ}{12}$

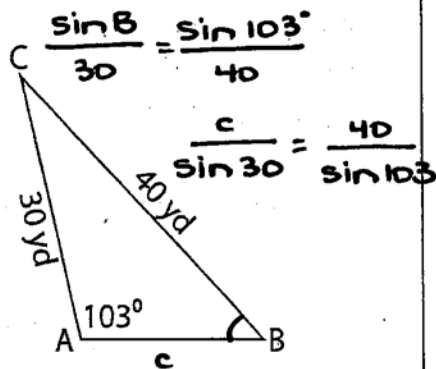


$\angle R = \underline{63.5^\circ}$

$\angle Q = \underline{44.7^\circ}$

$q = \underline{8.9 \text{ in}}$

4)



$\angle B = \underline{47.0^\circ}$

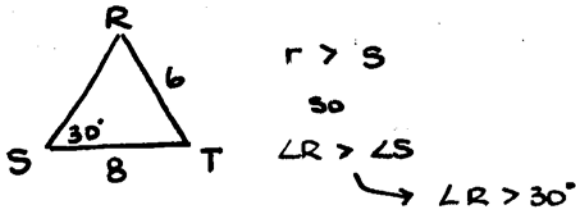
$\angle C = \underline{30.0^\circ}$

$c = \underline{20.5 \text{ yd}}$

## Possible Triangles

Write the number of possible triangles that can be formed using given measurements.

1)  $\angle S = 30^\circ, r = 8 \text{ in}, s = 6 \text{ in}$

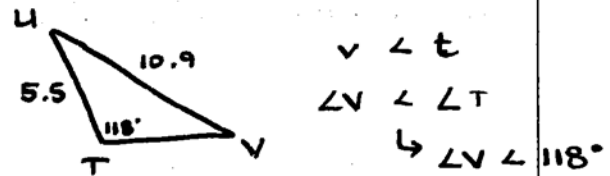


$$\frac{\sin R}{8} = \frac{\sin 30^\circ}{6}$$

$$R = 41.8^\circ, 138.2^\circ$$

2 triangles

2)  $\angle T = 118^\circ, t = 10.9 \text{ yd}, v = 5.5 \text{ yd}$

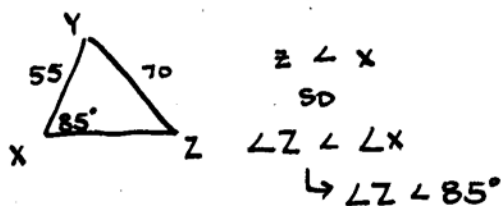


$$\frac{\sin V}{5.5} = \frac{\sin 118^\circ}{10.9}$$

$$V = 26.5^\circ$$

1 triangle

3)  $\angle X = 85^\circ, x = 70 \text{ ft}, z = 55 \text{ ft}$

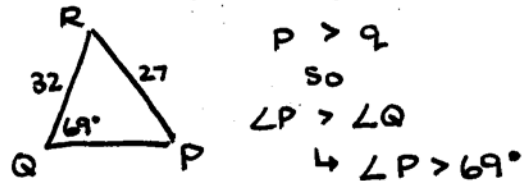


$$\frac{\sin Z}{55} = \frac{\sin 85^\circ}{70}$$

$$Z = 51.5^\circ$$

1 triangle

4)  $\angle Q = 69^\circ, p = 32 \text{ in}, q = 27 \text{ in}$

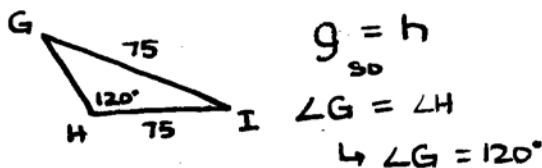


$$\frac{\sin P}{32} = \frac{\sin 69^\circ}{27}$$

$\hookrightarrow$  ERROR

0 triangles

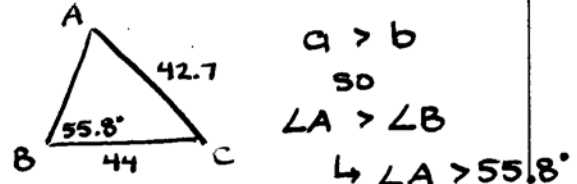
5)  $\angle H = 120^\circ, g = 75 \text{ yd}, h = 75 \text{ yd}$



\* no triangle can be made with 2 angles that are greater than  $90^\circ$

no triangles

6)  $\angle B = 55.8^\circ, a = 44 \text{ ft}, b = 42.7 \text{ ft}$



$$\frac{\sin A}{44} = \frac{\sin 55.8^\circ}{42.7}$$

$$A = 58.5^\circ, 121.5^\circ$$

2 triangles