

Express as a fraction.

3) $\csc \theta = \frac{2\sqrt{31}}{4} = \frac{\sqrt{31}}{2}$

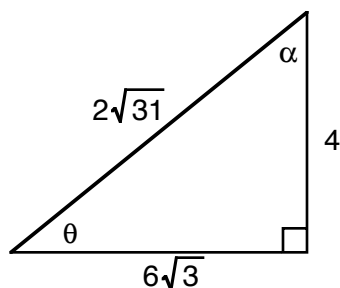
6) $\csc \alpha = \frac{\sqrt{93}}{9}$

4) $\sec \theta = \frac{2\sqrt{31}}{6\sqrt{3}} = \frac{\sqrt{93}}{9}$

7) $\sec \alpha = \frac{\sqrt{31}}{2}$

5) $\cot \theta = \frac{6\sqrt{3}}{4} = \frac{3\sqrt{3}}{2}$

8) $\cot \alpha = \frac{2\sqrt{3}}{9}$



Express as a decimal.

9) $\sin \theta = \frac{4}{2\sqrt{31}} = .3592$

12) $\sin \alpha = \frac{6\sqrt{3}}{2\sqrt{31}} = .9333$

10) $\cos \theta = \frac{6\sqrt{3}}{2\sqrt{31}} = .9333$

13) $\cos \alpha = \frac{4}{2\sqrt{31}} = .3592$

11) $\tan \theta = \frac{4}{6\sqrt{3}} = .3849$

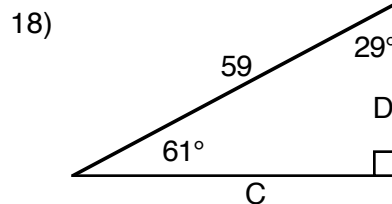
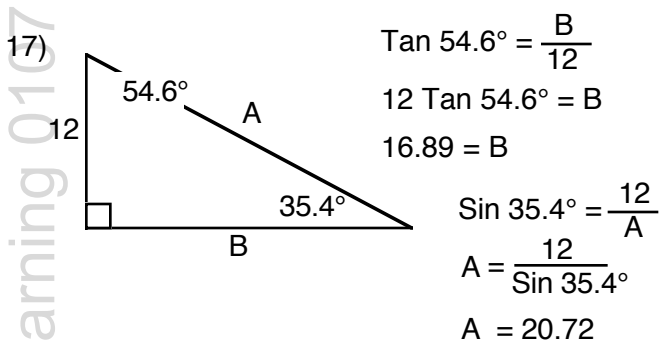
14) $\tan \alpha = \frac{6\sqrt{3}}{4} = 2.5981$

Answers to 15 and 16 may vary slightly.

15) The measure of θ is 21.05° .

16) The measure of α is 68.95° .

Solve for the lengths of the sides and the measures of the angles.

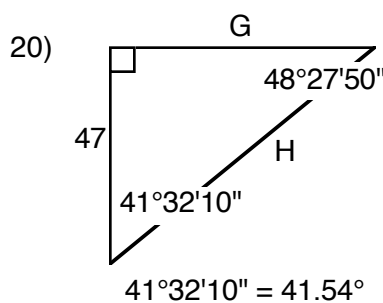
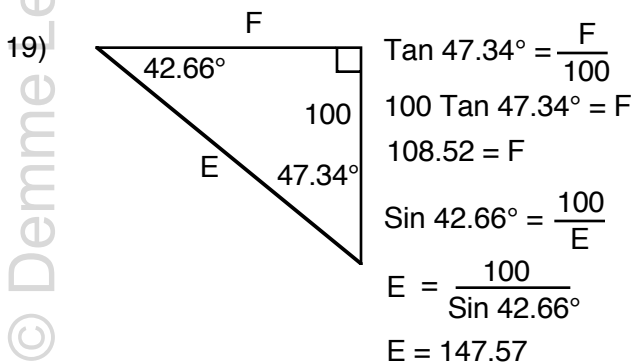


$\sin 61^\circ = \frac{D}{59}$

(59) $(\sin 61^\circ) = D$
 $51.6 = D$

$\cos 61^\circ = \frac{C}{59}$

(59) $(\cos 61^\circ) = C$
 $28.6 = C$



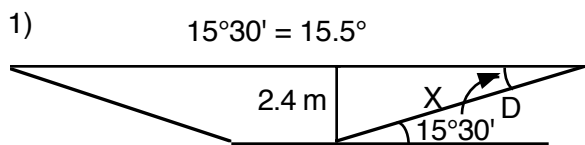
$\tan 41.54^\circ = \frac{G}{47}$

$47 \tan 41.54^\circ = G$
 $41.64 = G$

$\cos 41.54^\circ = \frac{47}{H}$

$H = \frac{47}{\cos 41.54^\circ}$

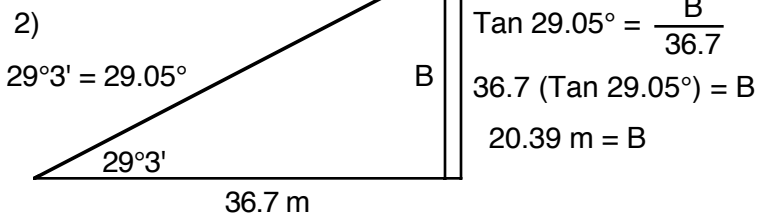
$H = 62.79$



$$\sin 15.5 = \frac{2.4}{X}$$

$$X = \frac{2.4}{\sin 15.5}$$

$$X = 8.98 \text{ m}$$



Express as a fraction.

$$3) \csc \theta = \frac{11}{4.6}$$

$$6) \csc \alpha = \frac{11}{10}$$

$$4) \sec \theta = \frac{11}{10}$$

$$7) \sec \alpha = \frac{11}{4.6}$$

$$5) \cot \theta = \frac{10}{4.6}$$

$$8) \cot \alpha = \frac{4.6}{10}$$

Express as a decimal.

$$9) \sin \theta = \frac{4.6}{11} = .4182$$

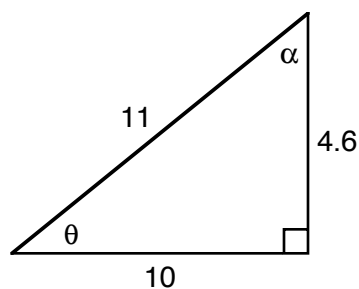
$$12) \sin \alpha = \frac{10}{11} = .9091$$

$$10) \cos \theta = \frac{10}{11} = .9091$$

$$13) \cos \alpha = \frac{4.6}{11} = .4182$$

$$11) \tan \theta = \frac{4.6}{10} = .46$$

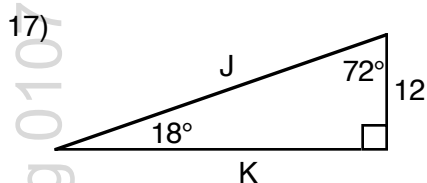
$$14) \tan \alpha = \frac{10}{4.6} = 2.1739$$



15) The measure of θ is 24.7° .

16) The measure of θ is 65.3° .

Solve for the lengths of the sides and the measures of the angles.

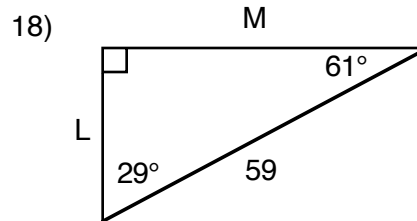


$$\tan 72^{\circ} = \frac{K}{12}$$

$$12 \tan 72^{\circ} = 36.93$$

$$\sin 18^{\circ} = \frac{12}{J}$$

$$J = \frac{12}{\sin 18^{\circ}} = 38.83$$



$$\sin 29^{\circ} = \frac{M}{59}$$

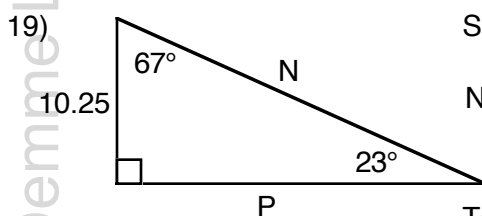
$$59 \sin 29^{\circ} = M$$

$$28.6 = M$$

$$\cos 29^{\circ} = \frac{L}{59}$$

$$59 \cos 29^{\circ} = L$$

$$51.6 = L$$



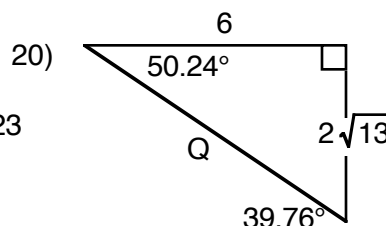
$$\sin 23^{\circ} = \frac{10.25}{N}$$

$$N = \frac{10.25}{\sin 23^{\circ}} = 26.23$$

$$\tan 67^{\circ} = \frac{P}{10.25}$$

$$10.25 \tan 67^{\circ} = P$$

$$24.15 = P$$



$$2\sqrt{13} = 7.2111$$

$$\tan \theta = \frac{7.2111}{6}$$

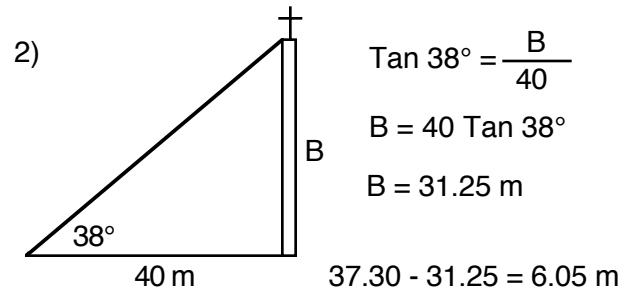
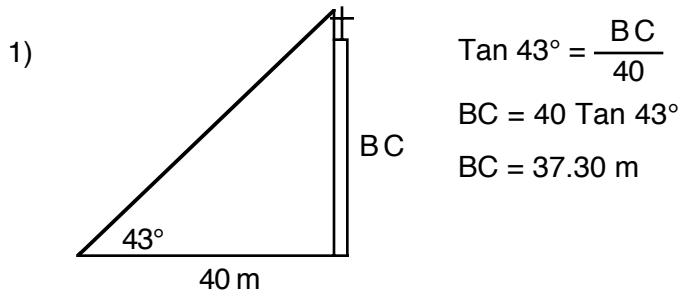
$$\arctan \theta = 1.202$$

$$\theta = 50.24^{\circ}$$

$$\alpha = 39.76^{\circ}$$

$$(2\sqrt{13})^2 + (6)^2 = Q^2$$

$$2\sqrt{22} = Q^2$$



Express as a fraction.

3) $\csc \theta = \frac{15}{7.1}$

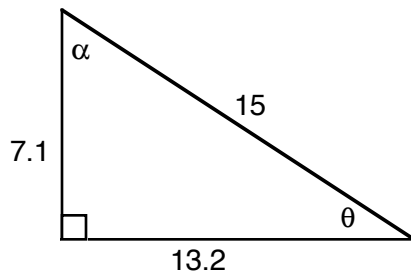
6) $\csc \alpha = \frac{15}{13.2}$

4) $\sec \theta = \frac{15}{13.2}$

7) $\sec \alpha = \frac{15}{7.1}$

5) $\cot \theta = \frac{13.2}{7.1}$

8) $\cot \alpha = \frac{7.1}{13.2}$



Express as a decimal.

9) $\sin \theta = \frac{7.1}{15} = .4733$

12) $\sin \alpha = \frac{13.2}{15} = .8800$

10) $\cos \theta = \frac{13.2}{15} = .8800$

13) $\cos \alpha = \frac{7.1}{15} = .4733$

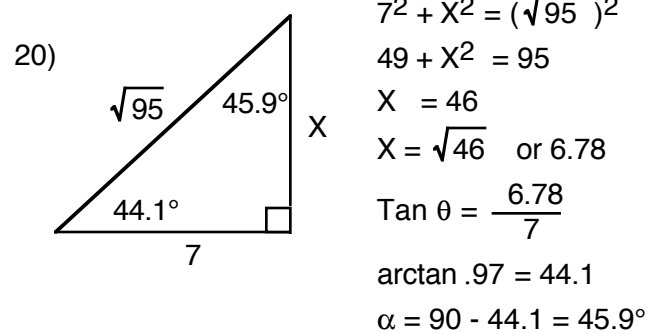
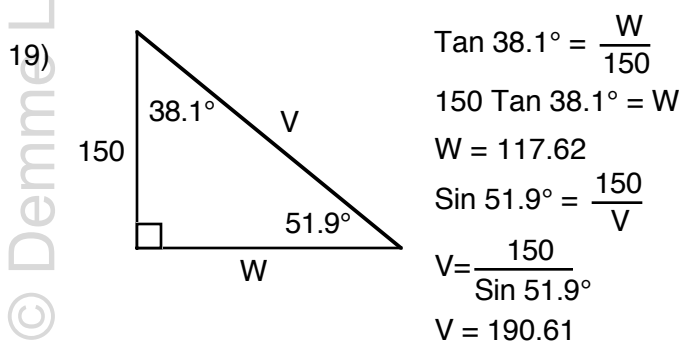
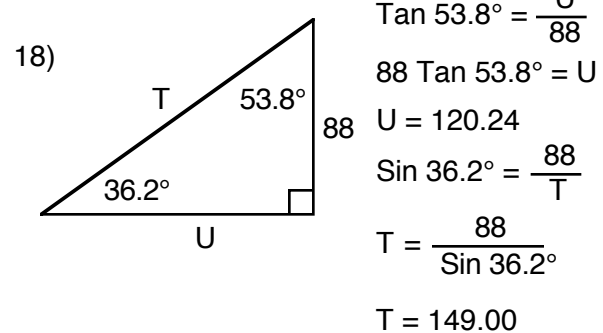
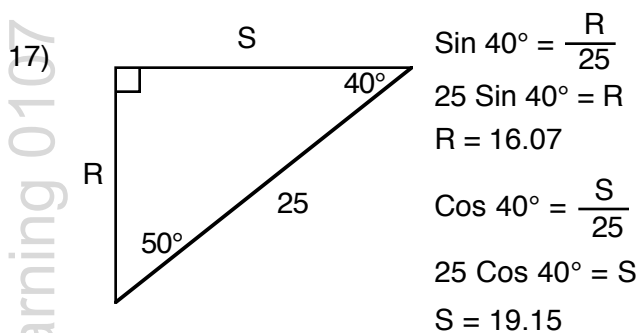
11) $\tan \theta = \frac{7.1}{13.2} = .5379$

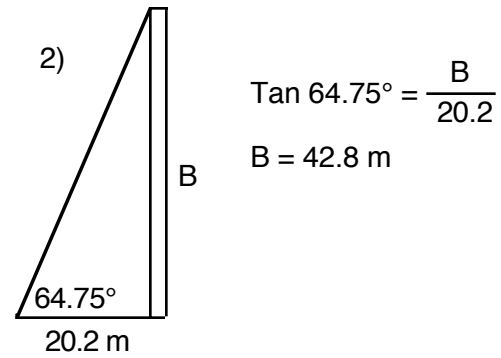
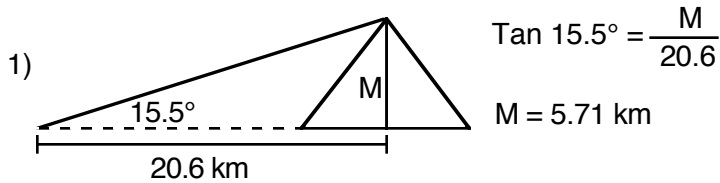
14) $\tan \alpha = \frac{13.2}{7.1} = 1.8592$

15) The measure of θ is 28.25° .

16) The measure of θ is 61.75° .

Solve for the lengths of the sides and the measures of the angles.





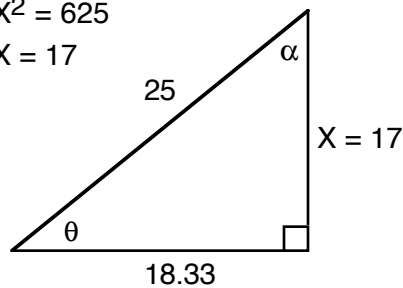
Express as a fraction.

$$(18.33)^2 + X^2 = 25^2$$

$$336 + X^2 = 625$$

$$X^2 = 625$$

$$X = 17$$



$$3) \csc \theta = \frac{25}{17}$$

$$4) \sec \theta = \frac{25}{18.33}$$

$$5) \cot \theta = \frac{18.33}{17}$$

$$6) \csc \alpha = \frac{25}{18.33}$$

$$7) \sec \alpha = \frac{25}{17}$$

$$8) \cot \alpha = \frac{17}{18.33}$$

Express as a decimal.

$$9) \sin \theta = \frac{17}{25} = .6800$$

$$10) \cos \theta = \frac{18.33}{25} = .7332$$

$$11) \tan \theta = \frac{17}{18.33} = .9274$$

$$12) \sin \alpha = \frac{18.33}{25} = .7332$$

$$13) \cos \alpha = \frac{17}{25} = .6800$$

$$14) \tan \alpha = \frac{18.33}{17} = 1.0782$$

15) The measure of θ is 42.84° .

16) The measure of θ is 47.16° .

Solve for the lengths of the sides and the measures of the angles.

