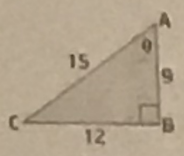
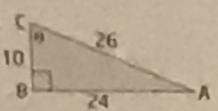
Primary Trig Ratio's

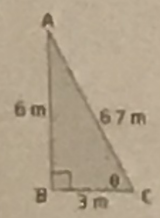
Practise P.372

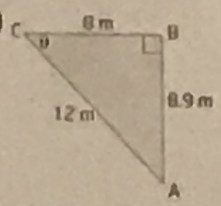
For help with questions 1 and 2, see Example 1.

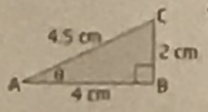
1. Find sin θ, cos θ, and tan θ for each triangle, expressed as fractions in lowest terms.

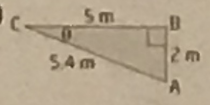
a) 

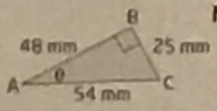
b) 

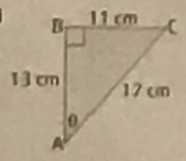
c) 

d) 

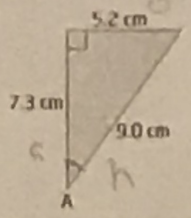
e) 

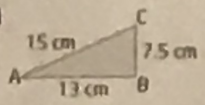
f) 

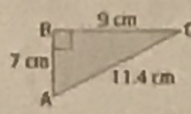
g) 

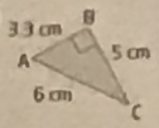
h) 

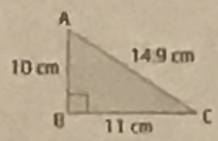
2. Find the three primary trigonometric ratios for ∠A, to four decimal places.

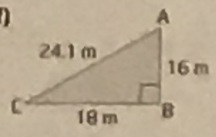
a) 

b) 

c) 

d) 

e) 

f) 

For help with questions 3 to 5, see Example 2.

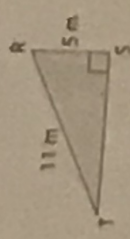
3. Evaluate each of the following with a calculator, rounded to four decimal places.

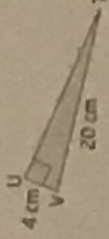
a) sin 35° b) sin 45°
c) sin 60° d) sin 37°
e) sin 25° f) sin 0°
g) sin 89° h) sin 30°

4. Evaluate each of the following with a calculator, rounded to four decimal places.

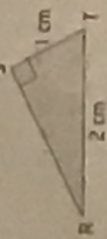
a) cos 80.2° b) cos 45°
c) cos 30° d) cos 60°
e) cos 89° f) cos 0°

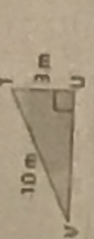
8. Calculate sin T in each triangle. Then, find ∠T, to the nearest degree.

a) 

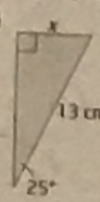
b) 

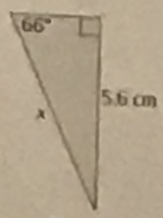
9. Calculate cos T in each triangle. Then, find ∠T, to the nearest degree.

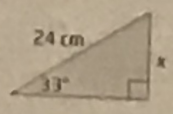
a) 

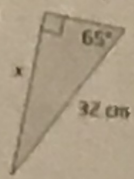
b) 

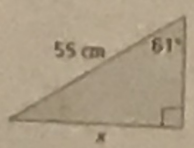
10. Find the length of x, to the nearest tenth of a unit, by applying the sine ratio.

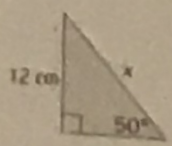
a) 

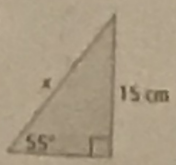
b) 

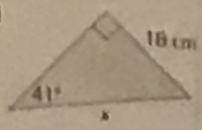
c) 

d) 

e) 

f) 

g) 

h) 

SOH CAH TOA

1.

a) $\sin\theta = \frac{\text{Opposite}}{\text{Hypotenuse}}$

$\sin\theta = \frac{12}{15}$

$\sin\theta = \frac{4}{5}$

$\cos\theta = \frac{\text{Adjacent}}{\text{Hypotenuse}}$

$\cos\theta = \frac{9}{15}$

$\cos\theta = \frac{3}{5}$

$\tan\theta = \frac{\text{Opposite}}{\text{Adjacent}}$

$\tan\theta = \frac{12}{9}$

$\tan\theta = \frac{4}{3}$

b) $\sin\theta = \frac{24}{26}$

$\sin\theta = \frac{12}{13}$

$\cos\theta = \frac{10}{26}$

$\cos\theta = \frac{5}{13}$

$\tan\theta = \frac{10}{24}$

$\tan\theta = \frac{5}{12}$

Over

c) $\sin\theta = \frac{6m}{6.7m}$

$\sin\theta = 0.8955\ m$

$\cos\theta = \frac{3m}{6.7m}$

$\cos\theta = 0.4478\ m$

$\tan\theta = \frac{6m}{3m}$

$\tan\theta = 2m$

2. a) $\sin\angle A = \frac{5.2cm}{9cm}$

$\sin\angle A = 0.7778\ cm$

$\cos\angle A = \frac{7.3cm}{9cm}$

$\cos\angle A = 0.8111\ cm$

$\tan\angle A = \frac{5.2cm}{7.3cm}$

$\tan\angle A = 0.7123\ cm$

b) $\sin \angle A = \frac{7.5\,cm}{15\,cm}$

$\sin \angle A = 0.5\,cm$

$\cos \angle A = \frac{13\,cm}{15\,cm}$

$\cos \angle A = 0.8667\,cm$

$\tan \angle A = \frac{7.5\,cm}{13\,cm}$

$\tan \angle A = 0.5769\,cm$

c) $\sin \angle A = \frac{9\,cm}{11.4\,cm}$

$\sin \angle A = 0.7895\,cm$

$\cos \angle A = \frac{7\,cm}{11.4\,cm}$

$\cos \angle A = 0.614\,cm$

$\tan \angle A = \frac{9\,cm}{7\,cm}$

$\tan \angle A = 1.2857\,cm$

Over

3.

a) 0.5736°

c) 0.8660°

4.

a) 0.1702°

c) 0.8660°

8.

a) $\sin T = \frac{5\,m}{11\,m}$

$\sin T = 0.4545$

$T = 27^\circ$

b) $\sin T = \frac{4\,m}{20\,m}$

$\sin T = 0.2$

$T = 12^\circ$

9.

a) $\cos T = \frac{1\,cm}{2\,cm}$

$\cos T = 0.5$

$T = 30^\circ$

b) $\cos T = \frac{3\,m}{10\,m}$

$\cos T = 0.3$

$T = 17^\circ$

10.

a) $\sin 25^\circ = \frac{x}{13} \Rightarrow x = (\sin 25^\circ)(13)$
$x = 5.4940$

b) $\sin 66^\circ = \frac{5.6}{x} \Rightarrow x = \frac{5.6}{\sin 66^\circ}$

$x = 6.1300$

c) $\sin\theta = \frac{6}{6.7} \Rightarrow \sin\theta = 0.8955$
$\theta = 63.5756$

d) $\sin 65^\circ = \frac{x}{32} \Rightarrow x = (\sin 65^\circ)(32)$
$x = 29.0018$

e) $\sin 61^\circ = \frac{x}{55} \Rightarrow x = (\sin 61^\circ)(55)$
$x = 48.1041$

f) $\sin 50^\circ = \frac{12}{x} \Rightarrow x = \frac{12}{\sin 50^\circ}$

$x = 15.6649$

g) $\sin 55^\circ = \frac{15}{x} \Rightarrow x = \frac{15}{\sin 55^\circ}$

$x = 18.3116$

h) $\sin 41^\circ = \frac{18}{x} \Rightarrow x = \frac{18}{\sin 41^\circ}$

$x = 27.4366$

Over