

# HOMEWORK: Cosine Ratio (Sides & Angles) Date: Solutions

1. Use a calculator to find each value to four decimal places.

a)  $\cos 38^\circ$

b)  $\cos 42^\circ$

c)  $\cos 15^\circ$

d)  $\cos 125^\circ$

2. Use a calculator to find the measure of each angle A to the nearest degree. (Use  $\cos^{-1}$ )

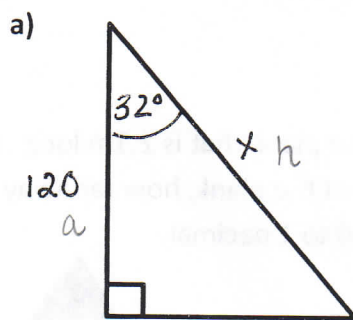
a)  $\cos A = 0.5736$

b)  $\cos A = 0.7193$

c)  $\cos A = .1234$

d)  $\cos A = .5678$

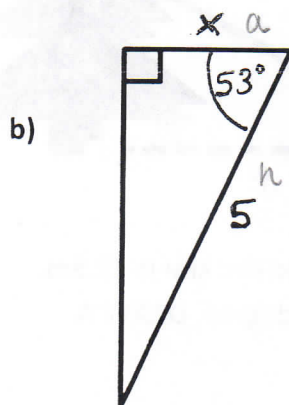
3. Find the missing side rounded to 1 decimal place. CAH



$$\cos 32^\circ = \frac{120}{h}$$

$$\frac{h \cos 32^\circ}{\cos 32^\circ} = \frac{120}{\cos 32^\circ}$$

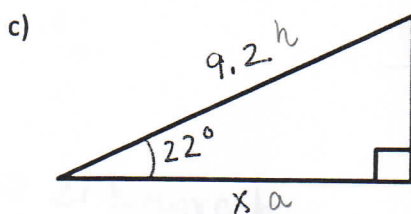
$$h = 141.5$$



$$\cos 53^\circ = \frac{x}{5}$$

$$5 \cos 53^\circ = x$$

$$3.0 = x$$



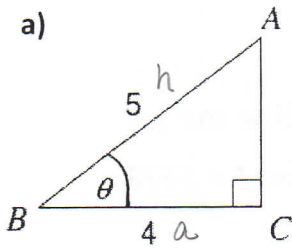
$$\cos 22^\circ = \frac{x}{9.2}$$

$$9.2 \cos 22^\circ = x$$

$$8.5 = x$$

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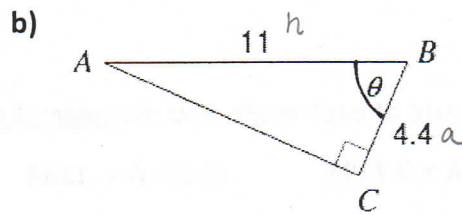
4. Find the missing angle. Round your answer to the nearest degree.



$$\cos B = \frac{4}{5}$$

$$\angle B = \cos^{-1}\left(\frac{4}{5}\right)$$

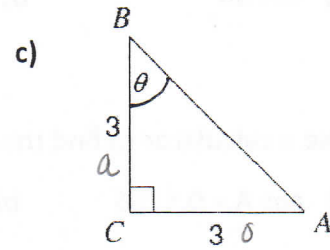
$$\angle B = 37^\circ$$



$$\cos B = \frac{4.4}{11}$$

$$\angle B = \cos^{-1}\left(\frac{4.4}{11}\right)$$

$$\angle B = 66^\circ$$



$$\tan B = \frac{3}{3}$$

$$\angle B = \tan^{-1}\left(\frac{3}{3}\right)$$

$$\angle B = 45^\circ$$

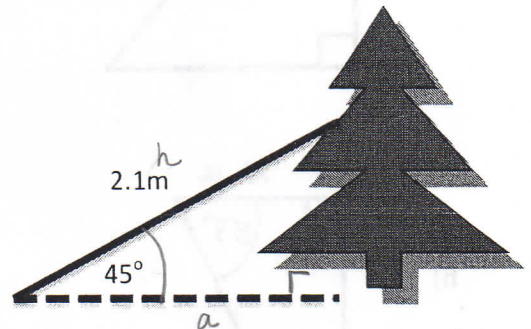
5. Hannah wants to make a lean-to shelter against a tree. She starts with a plank that is 2.1m long. If she wants to have a  $45^\circ$  angle between the ground and the lower end of the plank, how far away from the base of the tree could the lower end of the lean-to be? Round to 1 decimal.

$$\cos 45^\circ = \frac{a}{2.1}$$

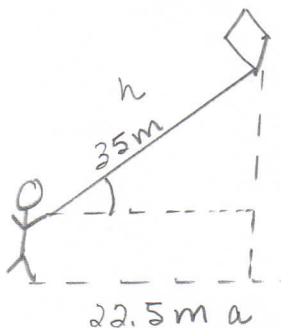
$$2.1 \cos 45^\circ = a$$

$$1.5 = a$$

$\therefore$  lean is 1.5m away from tree.



6. Margo's kite string is 35m long. The horizontal distance between Margo and the kite is 22.5m. Calculate the angle of the kite string to the ground rounded to the nearest degree. DRAW A DIAGRAM TO HELP YOU.



$$\cos A = \frac{22.5}{35}$$

$$\angle A = \cos^{-1}\left(\frac{22.5}{35}\right)$$

$$\angle A = 50^\circ$$

$\therefore$  angle between string and ground is  $50^\circ$ .