BECA / IB Math 6 Geometry
22 March 2022

Name: Solutions

6.4 Do Now Quiz: Right triangle trigonometry

HSG.SRT.C.8
(11.8) non-right △

Do Now (PreQuiz)

1. Calculate each value. Round to the nearest thousandth.

(a) $\sin 11° = 0.190808\ldots \approx 0.191$

(b) $\cos 62° = 0.469471\ldots \approx 0.469$

(c) $\tan 23° = 0.424474\ldots \approx 0.424$

(d) $\sin 81° = 0.987688\ldots \approx 0.988$

2. Find θ. Round to the nearest whole degree.

(a) $\theta = \sin^{-1}(\frac{3}{5}) = 36.8698\ldots \approx 37$

(b) $\theta = \tan^{-1}(0.88) = 41.3477\ldots \approx 41$

(c) $\theta = \cos^{-1}(0.500) = 60°$

(d) $\tan\theta = \frac{11.3}{6.9}$

$\theta = 58.5909\ldots \approx 59°$

3. Solve each equation for x, rounding to the nearest tenth.

(a) $\cos 71° = \frac{x}{15}$

$x = 15\cos 71 = 4.88352\ldots \approx 4.9$

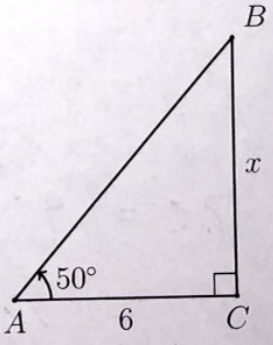
(b) $\tan 49° = \frac{12.7}{x}$

$x = \frac{12.7}{\tan 49} = 11.0399\ldots \approx 11.0$

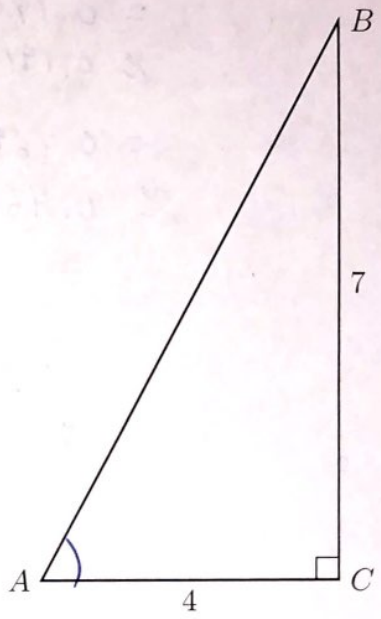
4. Given right $\triangle ABC$ with $AC = 6$, $m\angle A = 50°$. Find the value of $BC = x$.

$\tan 50 = \frac{x}{6}$

$x = 6\tan 50 = 7.15052\ldots \approx 7.15$



5. $\triangle ABC$ is shown with $m\angle C = 90°$ and the lengths of the triangle's sides are $AC = 4$, $BC = 7$. (not drawn to scale)



(a) Write down the value of $\tan A$.

$\frac{7}{4}$

(b) Find the measure of $\angle A$.

$\tan^{-1}\left(\frac{7}{4}\right) = 60.2551\ldots$

≈ 60.3

(c) Write down the value of $\tan B$.

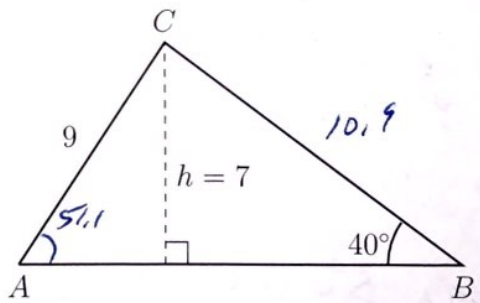
$\frac{4}{7}$

(d) Find the measure of $\angle B$.

$\tan^{-1}\left(\frac{4}{7}\right) = 29.7448\ldots$

≈ 29.7

6. Given $\triangle ABC$ with $AC = 9$ centimeters, altitude $h = 7$ cm, and the base $\hat{B} = 40°$. (diagram not to scale)



(a) Find $\hat{A}$ using $\hat{A} = \sin^{-1}\frac{7}{9}$.

$= 51.0575\ldots$

$\approx 51.1°$

(b) Find BC by solving the Law of Sines

$$\frac{BC}{\sin A} = \frac{9}{\sin B}$$

$$BC = 9 \cdot \frac{\sin 51.1}{\sin 40}$$

$= 10.8900\ldots$

≈ 10.9