

Name: KEY Quiz Score:        /20

**Quiz 1: Version A**

NO CALCULATORS. Show your reasoning. Use standard notation correctly.

1. Consider the right triangle pictured. Figure is not drawn to scale.

(a) Find  $b$ . Give an exact value, simplified.

$$\begin{aligned} b^2 + 4^2 &= 10^2 \\ b^2 &= 100 - 16 \\ b^2 &= 84 \end{aligned}$$

$$\begin{aligned} b &= \pm\sqrt{84} && (b > 0) \\ b &= \sqrt{4(21)} \\ b &= 2\sqrt{21} \end{aligned}$$

(b) Evaluate each of the following. Give exact values, simplified. You need not rationalize denominators.

i.  $\sin \theta = \frac{4}{10} = \frac{2}{5}$

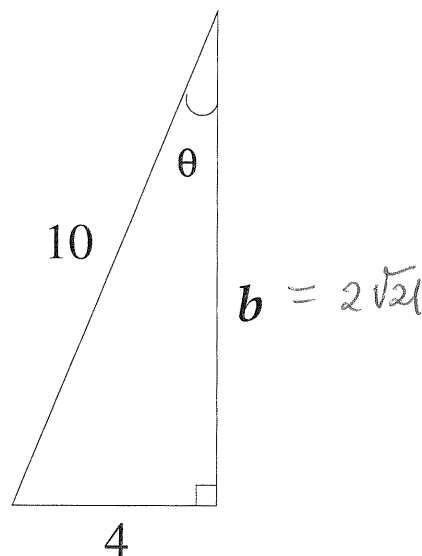
ii.  $\cos \theta = \frac{2\sqrt{21}}{10} = \frac{\sqrt{21}}{5}$

iii.  $\tan \theta = \frac{4}{2\sqrt{21}} = \frac{2}{\sqrt{21}}$

iv.  $\sec \theta = \frac{5}{\sqrt{21}}$

v.  $\csc \theta = \frac{5}{2}$

vi.  $\cot \theta = \frac{\sqrt{21}}{2}$



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**Quiz 1: Version B**

NO CALCULATORS. Show your reasoning. Use standard notation correctly.

1. Consider the right triangle pictured. Figure is not drawn to scale.

(a) Find  $b$ . Give an exact value, simplified.

$$\begin{aligned} b^2 + 5^2 &= 10^2 \\ b^2 &= 100 - 25 \\ b^2 &= 75 \end{aligned}$$

$$\begin{aligned} b &= \sqrt{75} \quad (b > 0) \\ b &= \sqrt{3 \cdot 25} \\ b &= 5\sqrt{3} \end{aligned}$$

(b) Evaluate each of the following. Give exact values, simplified. You need not rationalize denominators.

i.  $\sin \theta = \frac{5}{10} = \frac{1}{2}$

ii.  $\cos \theta = \frac{5\sqrt{3}}{10} = \frac{\sqrt{3}}{2}$

iii.  $\tan \theta = \frac{5}{5\sqrt{3}} = \frac{1}{\sqrt{3}}$

iv.  $\sec \theta = \frac{2}{\sqrt{3}}$

v.  $\csc \theta = \frac{2}{1} = 2$

vi.  $\cot \theta = \frac{\sqrt{3}}{1} = \sqrt{3}$

