

Reduce fractions and simplify radicals if possible.

1. Given $\sin\theta = \frac{2}{5}$ and $\frac{\pi}{2} < \theta < \pi$, find the values of the other 5 trigonometric functions of θ .

2. Simplify: $\cos\left(\frac{\pi}{2} - \theta\right)\csc\theta$

3. Simplify: $\frac{\sin^2\theta + \cos^2\theta}{\sec\theta}$

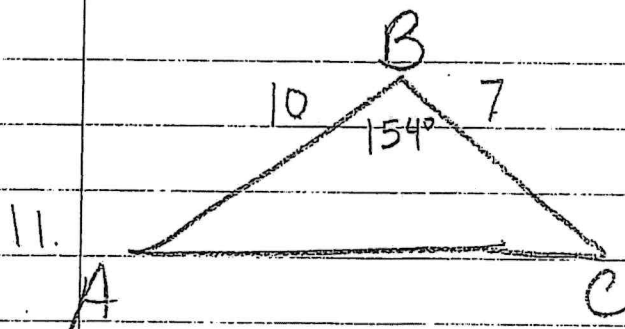
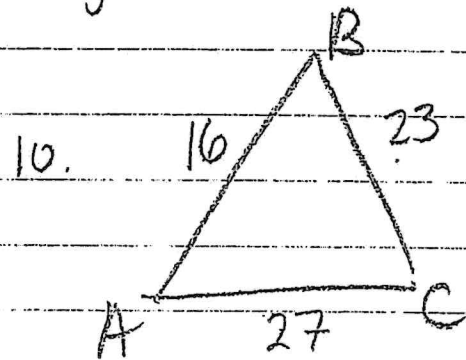
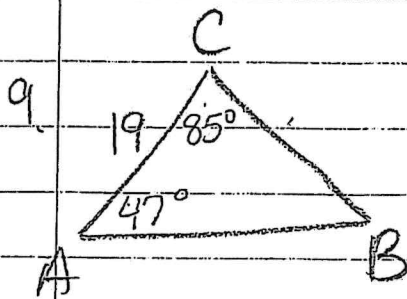
4. Verify: $\cos\theta\csc\theta\tan\theta = 1$

5. Verify: $\tan(-\theta)\cot(-\theta) = 1$

6. Find the exact value of $\sin\left(\frac{5\pi}{12}\right)$ using the sum and difference formulas.

7. Find $\cos(a + b)$ given $\sin a = \frac{5}{13}$ and $\frac{\pi}{2} < a < \pi$ and $\cos b = -\frac{3}{5}$ and $\frac{\pi}{2} < b < \pi$.

9-11 Solve the triangles. Round to nearest tenth.



12. Find the area of $\triangle ABC$

