

1. Find the hypotenuse when the legs are 3 and 4.

2. For $r=4$ and $\theta=0.5$ radians, find arc length.

3. Using the small-angle formula, approximate $\sin(0.2 \text{ radians})$.

4. Find $\sec(2\pi/3)$.

5. If $\sec\theta=2$ and θ is acute, find $\tan^2\theta$.

6. Cosine of a sum equals the sum of the two cosine values.

☐ True ☐ False

7. The amplitude of $a \cos\theta + b \sin\theta$ is $|a|+|b|$.

☐ True ☐ False

8. Solving $\sin 2x$ on one full turn of $2x$ finds every x solution on $[0, 2\pi)$.

☐ True ☐ False

9. The sine rule pairs each side with any angle in the triangle.

☐ True ☐ False

10. A transformed tangent graph has a finite amplitude and can be joined across its vertical asymptotes.

☐ True ☐ False

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1. **5.0**

Pythagoras gives $\sqrt{(3^2+4^2)}=5$.

2. **2.0**

Arc length= $r\theta=4\times 0.5=2$.

3. **0.2**

$\sin\theta\approx\theta$, with $\theta=0.2$ radians.

4. **-2.0**

$\cos(2\pi/3)=-1/2$, so its reciprocal is -2 .

5. **3.0**

$\tan^2\theta=\sec^2\theta-1=4-1=3$.

6. **False**

$\cos(A+B)=\cos A \cos B-\sin A \sin B$, which is not $\cos A+\cos B$.

7. **False**

The amplitude is $R=\sqrt{(a^2+b^2)}$: for $3\cos\theta+4\sin\theta$ it is 5, not 7.

8. **False**

If x runs over $[0,2\pi)$, then $2x$ runs over $[0,4\pi)$, so solve for $2x$ over two full turns.

9. **False**

Each side is paired with the angle opposite it: $a/\sin A=b/\sin B$.

10. **False**

A tangent graph has no amplitude, and its branches must not be joined across asymptotes.