

## Trigonometry Worksheets

### Sine and Cosine of Complementary Angles

Find the value of  $\theta$  that makes each statement true.

a.  $\sin \theta = \cos(\theta + 38)$

b.  $\cos \theta = \sin(\theta - 30)$

c.  $\sin \theta = \cos(3\theta + 20)$

d.  $\sin\left(\frac{\theta}{3} + 10\right) = \cos \theta$

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### Sine and Cosine of Complementary Angles

Find the value of  $\theta$  that makes each statement true.

a.  $\sin \theta = \cos(\theta + 38)$

$$\cos(90 - \theta) = \cos(\theta + 38)$$

$$90 - \theta = \theta + 38$$

$$52 = 2\theta$$

$$26 = \theta$$

b.  $\cos \theta = \sin(\theta - 30)$

$$\sin(90 - \theta) = \sin(\theta - 30)$$

$$90 - \theta = \theta - 30$$

$$120 = 2\theta$$

$$60 = \theta$$

c.  $\sin \theta = \cos(3\theta + 20)$

$$\cos(90 - \theta) = \cos(3\theta + 20)$$

$$90 - \theta = 3\theta + 20$$

$$70 = 4\theta$$

$$17.5 = \theta$$

d.  $\sin\left(\frac{\theta}{2} + 10\right) = \cos \theta$

$$\sin\left(\frac{\theta}{3} + 10\right) = \sin(90 - \theta)$$

$$\frac{\theta}{3} + 10 = 90 - \theta$$

$$\frac{4\theta}{3} = 80$$

$$\theta = 60$$

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