Bellwork Alg 2B Wednesday, May 23, 2018

Find all values of θ, $0° \leq \theta \leq 360°$ that makes each equation true.

1. $20\text{Cos}\theta + 13 = 30$

2. $-4\text{Tan}\theta - 11 = 3$

Find all values of θ, $0 \leq \theta \leq 2\pi$ that makes each equation true.

3. $15\text{Sin}\theta + 12 = 3$

4. $6\text{Tan}^2\theta - 7 = 17$

Bellwork Alg 2B Wednesday, May 23, 2018

Find all values of θ, $0° \leq \theta \leq 360°$ that makes each equation true.

1. $20\text{Cos}\theta + 13 = 30$

2. $-4\text{Tan}\theta - 11 = 3$

Find all values of θ, $0 \leq \theta \leq 2\pi$ that makes each equation true.

3. $15\text{Sin}\theta + 12 = 3$

4. $6\text{Tan}^2\theta - 7 = 17$

AL6 2B Bellwork WED 5-23-18

ANSWERS

(1) $20\cos\theta + 13 = 30$

$-13 \quad -13$

$\frac{20\cos\theta}{20} = \frac{17}{20}$

$\cos\theta = .85$

$\theta = \cos^{-1}(.85) = 31.79°$

& $-\theta = -31.79°$

$+360$

$328.21°$

(2) $-4\tan\theta - 11 = 3$

$+11 \quad +11$

$\frac{-4\tan\theta}{-4} = \frac{14}{-4}$

$\tan\theta = -3.5$

$\theta = \tan^{-1}(-3.5)$

$\theta = -74.05°$

$+360$

$285.95°$

& $\theta - 180°$

$= 105.95°$

(3) $15\sin\theta + 12 = 3$

$-12 \quad -12$

$\frac{15\sin\theta}{15} = \frac{-9}{15}$

$\sin\theta = -.6$

$\theta = \sin^{-1}(-.6)$

$\theta = -0.64$

$+2\pi$

5.64

& $\pi - \theta$

$= \pi - (-.64)$

$= 3.79$

(4) $6\tan^2\theta - 7 = 17$

$+7 \quad +7$

$\frac{6\tan^2\theta}{6} = \frac{24}{6}$

$\sqrt{\tan^2\theta} = \sqrt{4}$

$\tan\theta = \pm 2$

$\tan\theta = 2$

$\theta = \tan^{-1}(2)$

$\theta = 1.11$

& $\theta + \pi$

$= 1.11 + \pi$

4.25

$\tan\theta = -2$

$\theta = \tan^{-1}(-2)$

$\theta = -1.11$

$+2\pi$

5.18

& $\theta + \pi$

$= -1.11 + \pi$

$\theta = 2.03$