

Math 1730-016: Practice Test four

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Your Name:.....

Problem 1

Find the exact value of

$$\cos(\tan^{-1}\left(\frac{9}{40}\right)).$$

Problem 2

If $\sin(\theta) = -\frac{4}{5}$ and θ is in quadrant III, find $\tan(\theta)$.

Problem 3

Find the exact values of

(a)

$$\sin(8^\circ) \cos(22^\circ) + \cos(8^\circ) \sin(22^\circ).$$

(b)

$$\sin(75^\circ).$$

(c)

$$\sin\left(\frac{\pi}{12}\right)$$

Problem 4

Solve all solutions in the interval $[0, 2\pi)$.

$$2 \cos^2(x) + 5 \cos(x) + 2 = 0.$$

Problem 5

Solve triangle ABC . $A = 42^\circ$, $B = 37^\circ$, $a = 50$ meters.

Problem 6

Find the exact value of each of the following

(a) $\sin(405^\circ)$

(b) $\tan(-150^\circ)$

Problem 7

If $\sin(\theta) = -\frac{4}{5}$ and θ is in quadrant III, find $\tan(\theta) \cot(\theta) + \csc(\theta)$

Problem 8

If $\sin(\theta) = \frac{5}{13}$ and $\tan(\theta) = -\frac{5}{12}$, find $\sec(\theta)$.

Problem 9

Find all solutions of the equation in the interval $[0, 2\pi)$

$$\tan^2(x) + \tan(x) = 0.$$

Problem 10

(a) Factor and simplify

$$\frac{\sec^4(x) - \tan^4(x)}{\sec^2(x) + \tan^2(x)}$$

(b) Add and simplify

$$\frac{\cos(\theta)}{\sin(\theta)} + \frac{\sin(\theta)}{\cos(\theta)}$$