Trigonometry Test 1A

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Name: _____

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Navigator | Assessment | Student | 25 min

Question: 1

A trigonometric function is given by $f : R \to R$, $f(x) = -4\sin\left(\frac{\pi x}{4}\right)$

The amplitude and period of f are respectively:

a) 4 , 4 b) -4 , $\frac{\pi}{4}$ c) -4 , 8 d) 4 , $\frac{\pi}{4}$ e) 4 , 8

Question: 2

The minimum and maximum values for $y = 4 - 5\sin(x - \pi)$ respectively are:

a) -6 and -1 b) -1 and 9 c) 1 and 9 d) -9 and -1 e) -5 and 4

Question: 3

The function with rule: $f(x) = 2\tan\left(\frac{3\pi x}{5}\right)$ has period

a) $\frac{5}{3}$ b) $\frac{3}{5}$ c) $\frac{10}{3}$ d) $\frac{3}{10}$ e) $\frac{3\pi^2}{5}$

Question: 4

The equation to the graph shown could be:

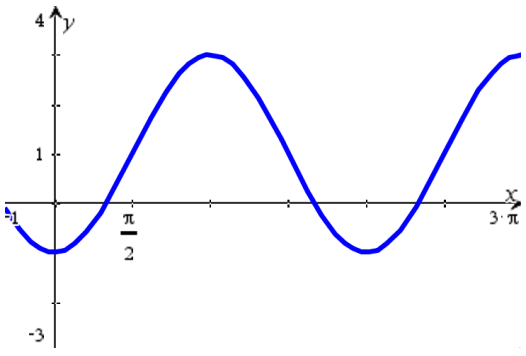
a) $f(x) = 2\cos(x) + 1$

b) $f(x) = 1 - \cos(x)$

c) $f(x) = 1 + 2\sin(x - \pi)$

d) $f(x) = 1 + 2\sin(x + \pi)$

e) $f(x) = 1 + 2\sin\left(x - \frac{\pi}{2}\right)$



Question: 5

If $\cos x = 0.4$, the value of: $\cos(\pi + x) + \sin\left(\frac{\pi}{2} - x\right)$ is:

a) 0.8 b) -0.8 c) $\pi + 0.4$ d) 0 e) $\pi - 0.4$

Question: 6

For the graph of $y = 50\tan\left(\frac{x}{5}\right)$ which of the following is correct.

a) The range is $[-50, 50]$ and the period is 10π

b) The range is $[-50, 50]$ and the period is 5π

c) The range is R and the period is 10π

d) The range is R and the period is 5π

e) The domain and range are both R

Question: 7

If $\tan(x) = \sqrt{2}$ and $\cos(x) = \frac{-\sqrt{3}}{3}$ then $\sin(x)$ is equal to:

a) $\frac{\sqrt{6}}{3}$ b) $\frac{-\sqrt{6}}{3}$ c) $\frac{\sqrt{6}}{6}$ d) $\frac{-\sqrt{6}}{6}$ e) $-2\sqrt{6}$

Question: 8

For a given function $f : [-\pi, \pi] \to R$, $f(x)$, it is known that $f(x) = 0$ has 4 solutions and $f(0) = 3$. The function could be:

a) $f(x) = 3\sin(2x)$

b) $f(x) = 3\cos(x)$

c) $f(x) = 3\sin(2x) + 3$

d) $f(x) = 2\cos(2x) + 2$

e) $f(x) = 2\sin\left(2x + \frac{\pi}{2}\right) + 1$

Question: 9

Sunrise time in a particular city can be approximated by: $t(d) = 1.5\cos\left(\frac{2\pi d}{365}\right) + 6.5$ where t is the time of morning in hours and d is the day of the year after January 1st. Trish recorded the sun rise time yesterday as 6:15am and noticed it was even earlier this morning. What month is it?

a) March b) April c) May d) August e) September

Question: 10

If $x = \frac{17\pi}{16}$ which of the following expressions would produce a positive answer?

a) $\tan(x)\sin(x)\cos^2(x)$

b) $\tan(x)\sin^2(x)\cos(x)$

c) $\tan(x)\sin(x)\cos(2x)$

d) $(\tan(x)\sin(x))^2\cos(x)$

e) $\tan(x)\sin(x)\cos(x)$