**Trigonometry: Functions**

**RETEST**

**Name**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Convert $\frac{8π}{3}$ radians to degrees.

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| --- | --- | --- | --- |
| A: 60o | B: 120o | C: 240o | D: 480o |

1. The terminal arm of angle$ θ$ in standard position intersects the unit circle at the point (m, n). Which expression represents tan$θ$?

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| --- | --- | --- | --- |
| A: $\frac{n}{m}$ | B: $\frac{m}{n}$ | C: $\frac{1}{m}$ | D:$ \frac{1}{n}$ |

1. Determine the exact value of csc $\frac{7π}{4}$.

|  |  |  |  |
| --- | --- | --- | --- |
| A: $\sqrt{2}$ | B: - $\sqrt{2}$ | C: $\frac{1}{\sqrt{2}}$ | D: - $\frac{1}{\sqrt{2}}$ |

1. If cot $θ$ = - $\frac{4}{3}$ and sin $θ$ < 0, determine the exact value of sec $θ$.

|  |  |  |  |
| --- | --- | --- | --- |
| A: - $\frac{5}{3}$ | B: - $\frac{5}{4}$ | C: $\frac{5}{4}$ | D:$ \frac{5}{3}$ |

1. Determine the amplitude of the function y = -4 sin 3x – 2.

|  |  |  |  |
| --- | --- | --- | --- |
| A: -4 | B: -2 | C: 2 | D: 4 |

1. Given the graph of the function y = *a* sin *b*(x – *c*) + *d* below, determine the value of *b*.
2. Give the range of y = 5sin $\frac{1}{2}$x + 8.

A. -13 $\leq $ y $\leq $ -3 B. 3 $\leq $ y $\leq $ 13

C. -13 $\leq $ y $\leq $ 13 D. 3 $\leq $ y $\leq $ 8

1. At a seaport, the water has a maximum depth of 18 m at 3:00 am. After this maximum depth, the first minimum depth of 4 m occurs at 9:30 am. Assume that the relation between the depth, *h* meters, and the time, *t* hours, is a sinusoidal function. Determine the equation for *h* at any time *t*.

A. y = 7cos $\frac{2π}{6.5}$ (t – 3) + 11 B. y = 7cos $\frac{2π}{13}$ (t – 3) + 11

C. y = 7cos $\frac{2π}{6.5}$ (t – 3) + 7 D. y = 7cos $\frac{2π}{13}$ (t – 3) + 7

1. Determine the period of y = tan $π$x.
2. An arc of length 5 cm subtends an angle of 30o at the centre of a circle with radius *r*. Determine the value of *r*.
3. A minimum value of a sinusoidal function is at $\left(\frac{π}{4}, 3\right)$. The nearest maximum value to the right of this point is at $\left(\frac{7π}{12}, 7\right)$. Determine an equation of this function.