**Exit Card**

1. Complete the table for each of the following

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | ParentFunction | Amplitude | Max value | Min Value | k | Phase shift | Axis of Curve | Equation |
| a) | sinx |  |  |  |  |  |  | y = ½ sin(x-45) + 2 |
| b) | cosx | 3 |  |  | 2 | 90 right | y=2 |  |
| c) | sinx |  |  | -4 | ½ | None | y=-2 |  |
| d) | cosx |  | 6 | -2 | 1 | 45 right |  |  |

1. The function shown is periodic.

|  |
| --- |
| Amplitude =  |
| Period =  |
| f(4)= |
| f(898)= |



1. Describe the following transformations for$y= -10sin⁡[3\left(x-60°\right]+ 8$ with respect to

 $y = sinx$.

 a. Amplitude: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ b. Period: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Axis of Curve: \_\_\_\_\_\_\_\_\_ d. Phase shift:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Max: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ f. Min:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Graph the following equation: y = 3cos (2x – 360) + 2
4. Given $y =3\sin(\left[4\left(x-45\right)\right])+ 10$,determine the amplitude, period, maximum, minimum and graph the function on the grid provided. Assume $-90\leq x\leq 90$.
5. Given $y =-2\cos((2x))- 5$,determine the amplitude, period, maximum, minimum and graph the function on the grid provided. Assume $0\leq x\leq 360$.
6. A Ferris wheel has radius of 7m. The centre of the wheel is 8 m above the ground. The Ferris wheel rotates at a constant speed of 15°/s. The height above the ground of the only red seat can be modeled by the function $h\left(t\right)=7\sin(\left(15°t\right))+ 8$. (1 + 2 + 2 = 5 marks)
7. What is maximum height during the first rotation?
8. When is the red seat at its maximum height **c.** How long will take for the red seat to complete

during the first rotation? two full rotations?

1. State the transformations in a correct order for the following equation. (5 marks)

$y=\frac{1}{2}sin⁡(\frac{1}{3}x-30)+2$

1. Determine the equation of the function $y = 3sin⁡[2(x-30)] +1$ if:
	1. the function is further stretched vertically by 2 and shifted 30 degrees right.
	2. the function is further stretched horizontally by 3 and shifted 2 units up.
	3. the function is further stretched horizontally by 1/4, vertically by 2.