Regents Exam Questions
F.IF.C.7: Graphing Trigonometric Functions 6b
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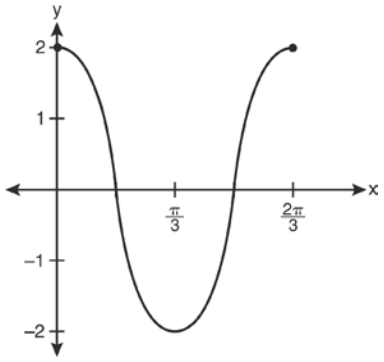
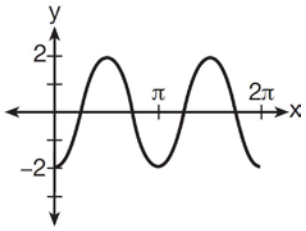
Name: _____

F.IF.C.7: Graphing Trigonometric Functions 6b

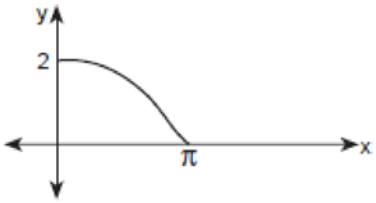
1 Which equation is represented by the graph below?



2 Which equation represents the graph below?

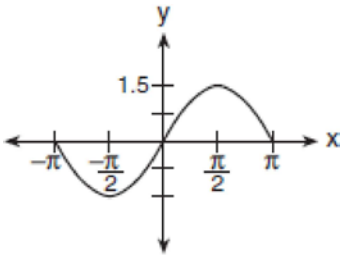


3 The accompanying diagram shows a section of a sound wave as displayed on an oscilloscope.



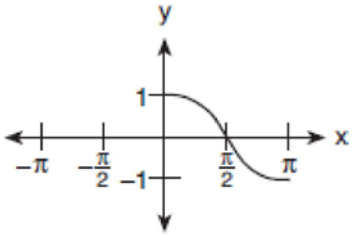
Which equation could represent this graph?

4 A radio transmitter sends a radio wave from the top of a 50-foot tower. The wave is represented by the accompanying graph.



What is the equation of this radio wave?

5 Which equation is represented by the accompanying graph?



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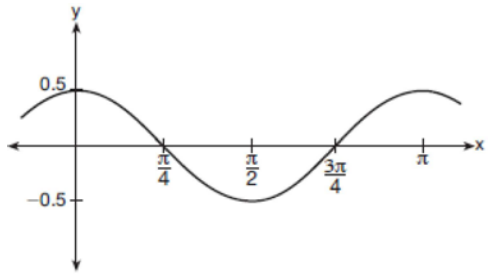
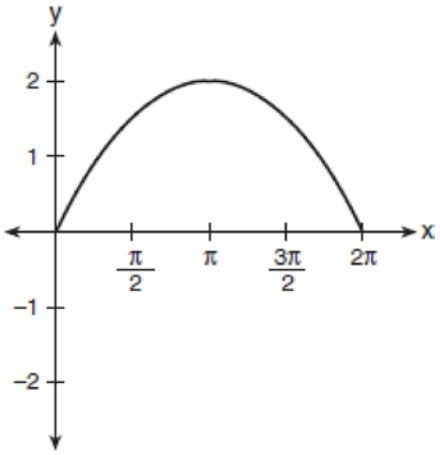
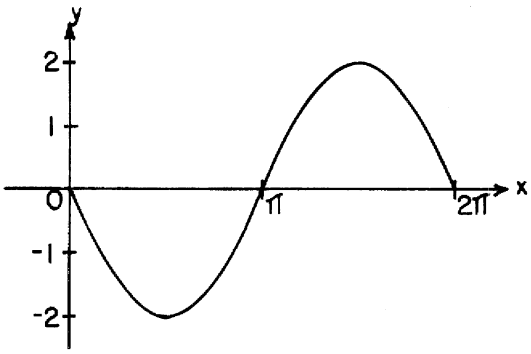
6 Which equation is represented by the graph shown below?



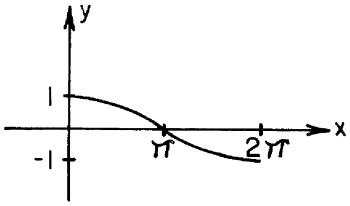
7 Which equation is represented by the accompanying graph?



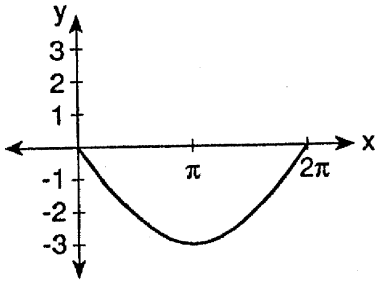
8 Which is an equation of the graph shown below?



9 Which is an equation of the graph shown below?



10 Which equation is represented by the graph in the diagram below?



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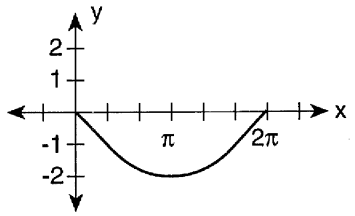
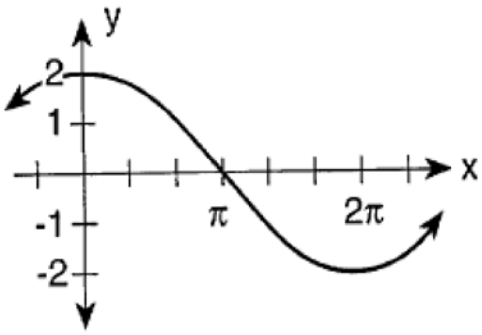
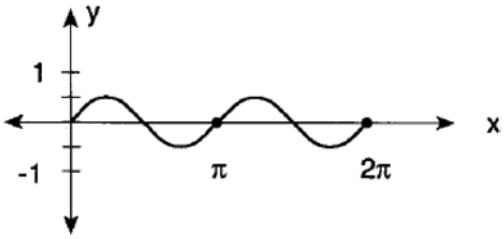
11 Which equation is represented by the graph below?



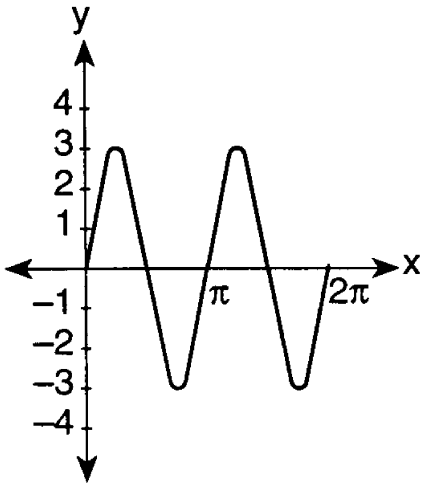
12 Which equation is represented in the graph below?



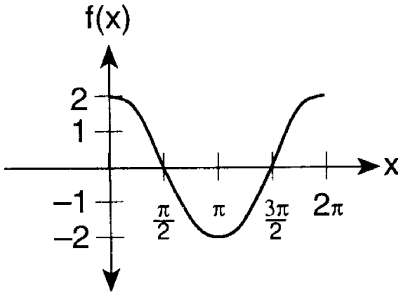
13 Which equation is represented in the accompanying graph?



14 Which equation is represented by the graph in the accompanying diagram?



15 Which trigonometric function is shown in the graph below?



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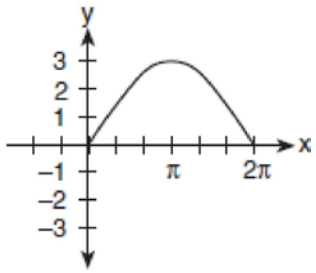
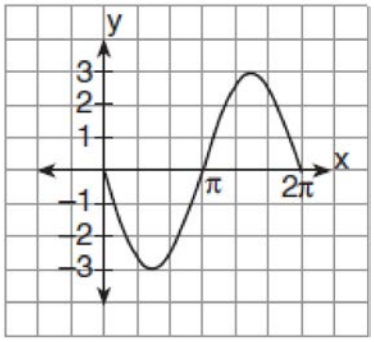
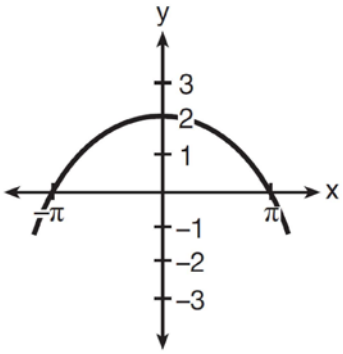
16 Which equation is represented by the graph in the accompanying diagram?



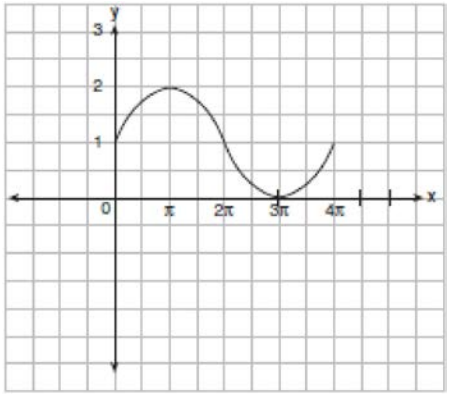
17 Which equation is represented on the graph shown below?



18 Which equation could be represented by the graph below?



19 In physics class, Eva noticed the pattern shown in the accompanying diagram on an oscilloscope.



Which equation best represents the pattern shown on this oscilloscope?

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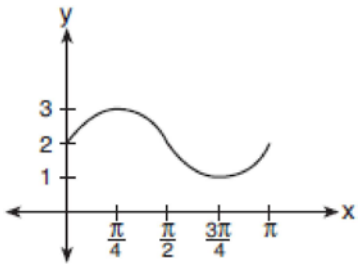
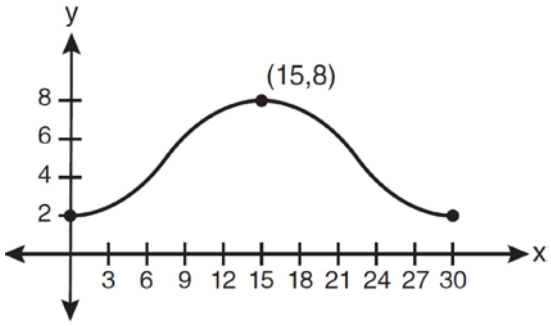
20 The accompanying graph represents a portion of a sound wave.

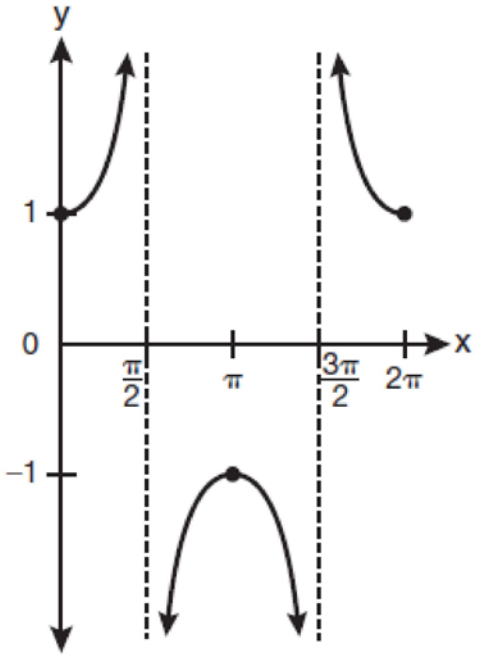


Which equation best represents this graph?

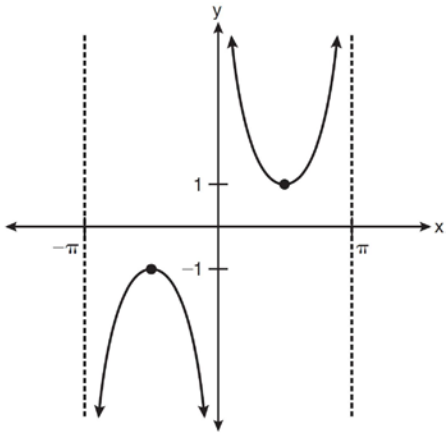
21 Which equation is graphed in the diagram below?



22 Which equation is represented by the graph below?



23 Which equation is sketched in the diagram below?



F.IF.C.7: Graphing Trigonometric Functions 6b

Answer Section

1 ANS:
$y = 2\cos 3x$

REF: 011320a2

2 ANS:
$y = -2\cos 2x$

REF: 061306a2

3 ANS:
$y = 2\cos\frac{x}{2}$

Since none of the answers has a translation, the point (0,2) must result from a dilation of 2 of the cosine function.

At $x = \pi$, the function is $\frac{1}{4}$ complete, so the period is 4π.

$$\text{period} = \frac{2\pi}{b}$$
$$4\pi = \frac{2\pi}{b}$$
$$b = \frac{2\pi}{4\pi}$$
$$b = \frac{1}{2}$$

REF: 010214b

4 ANS:
$y = 1.5\sin x$

The maximum and minimum of this sine function indicates the amplitude is 1.5.

REF: 060608b

5 ANS:
$y = \cos x$

REF: 060711b

6 ANS:
$y = \frac{1}{2}\cos 2x$

REF: 061708aii

7 ANS:
$y = 2\sin\frac{1}{2}x$

REF: 010419siii

8 ANS:
$y = -2\sin x$

REF: 068633siii

9 ANS:
$y = \cos\frac{1}{2}x$

REF: 018917siii

10 ANS:
$y = -3\sin\frac{1}{2}x$

REF: 089522siii

11 ANS:
$y = -2\sin\frac{1}{2}x$

REF: 069721siii

12 ANS:
$y = 2\cos\frac{1}{2}x$

REF: 089725siii

13 ANS:
$y = \frac{1}{2}\sin 2x$

REF: 019822siii

14 ANS:
$y = 3\sin 2x$

REF: 089820siii

15 ANS:
$f(x) = 2\cos x$

REF: 010019siii

16 ANS:
$y = 3\sin\frac{1}{2}x$

REF: 010119siii

17 ANS:
$y = -3\sin x$

REF: 080121siii

18 ANS:

$y = 2\cos\frac{1}{2}x$

REF: 081607a2

19 ANS:

$y = \sin\left(\frac{1}{2}x\right) + 1$

The sine function has been translated +1. Since the maximum is 2 and the minimum is 0, the amplitude is 1.

$$\text{period} = \frac{2\pi}{b}$$

$$4\pi = \frac{2\pi}{b}$$

$$b = \frac{2\pi}{4\pi}$$

$$b = \frac{1}{2}$$

REF: 010612b

20 ANS:

$y = \sin 2x + 2$

The sine function has been translated +2. Since the maximum is 3 and the minimum is 1, the amplitude is 1.

$$\text{period} = \frac{2\pi}{b}$$

$$\pi = \frac{2\pi}{b}$$

$$b = 2$$

REF: 080717b

21 ANS:

$y = -3\cos\left(\frac{\pi}{15}x\right) + 5$

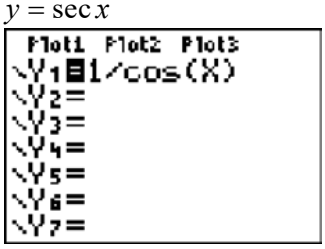
$\frac{2\pi}{b} = 30$

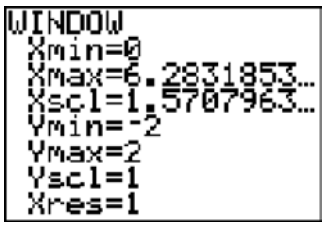
$b = \frac{\pi}{15}$

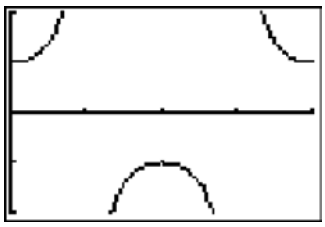
REF: 011227a2

22 ANS:

$y = \sec x$



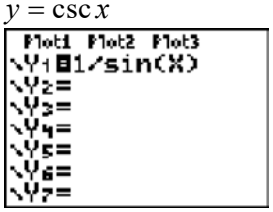


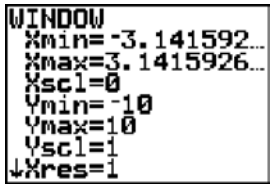


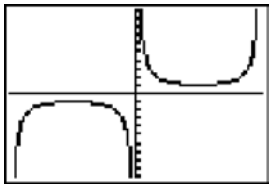
REF: 061020a2

23 ANS:

$y = \csc x$







REF: 011123a2