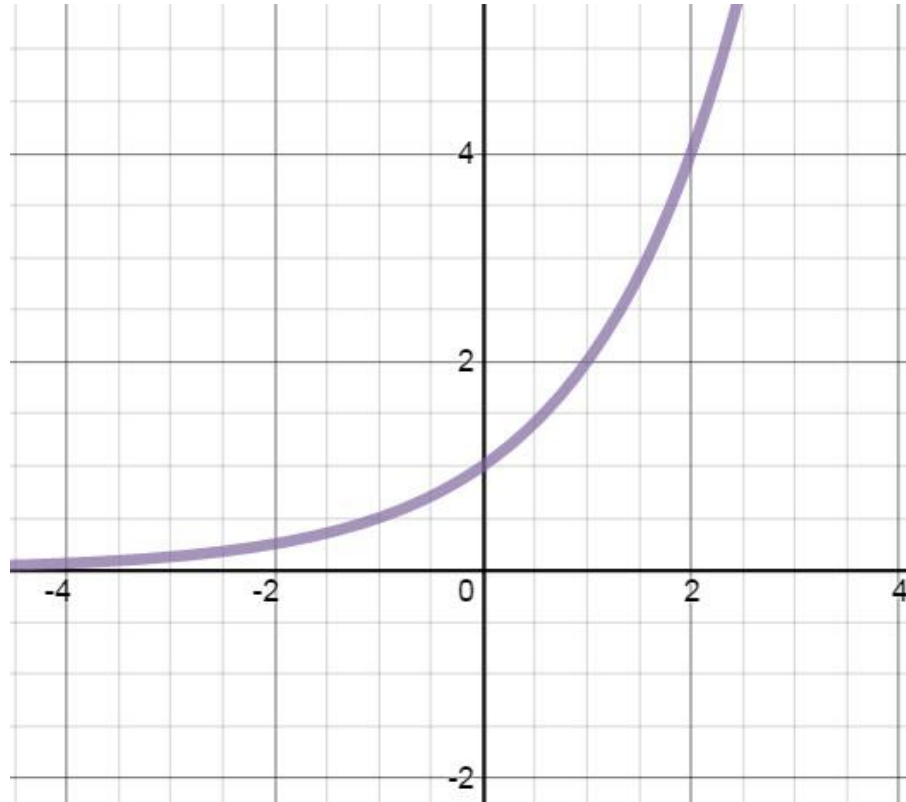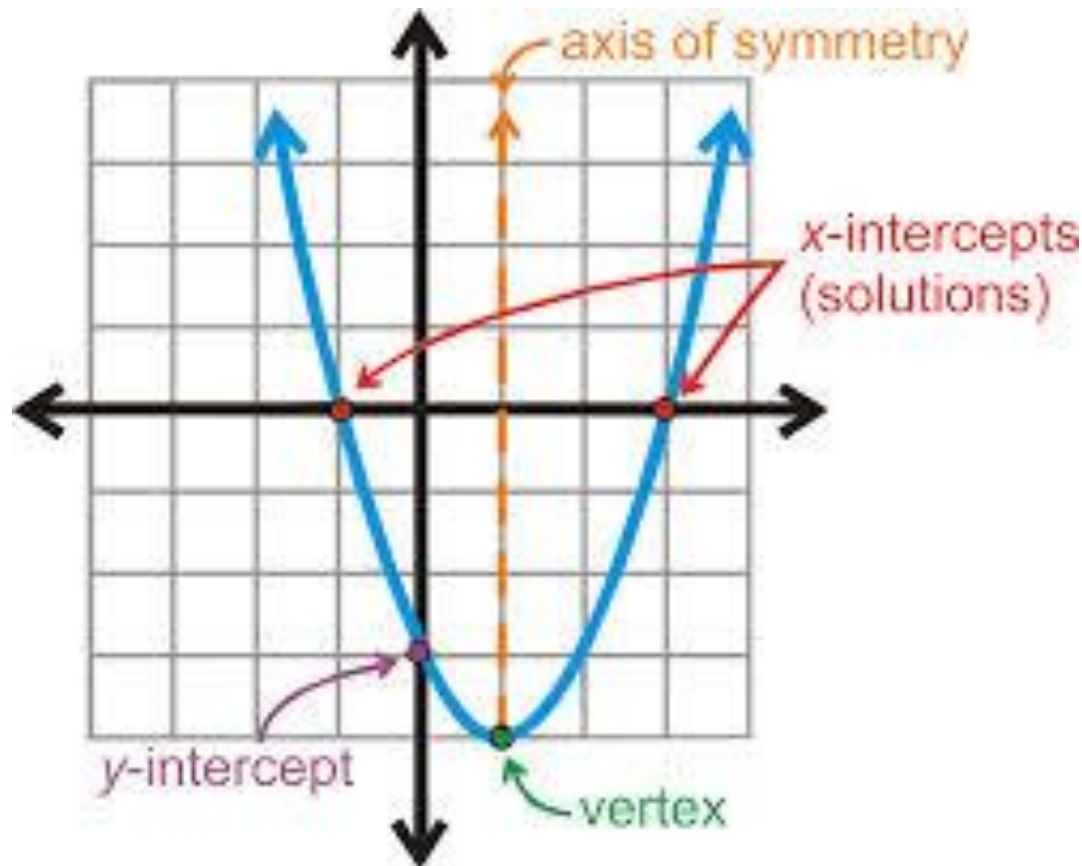# What is the name of this graph?
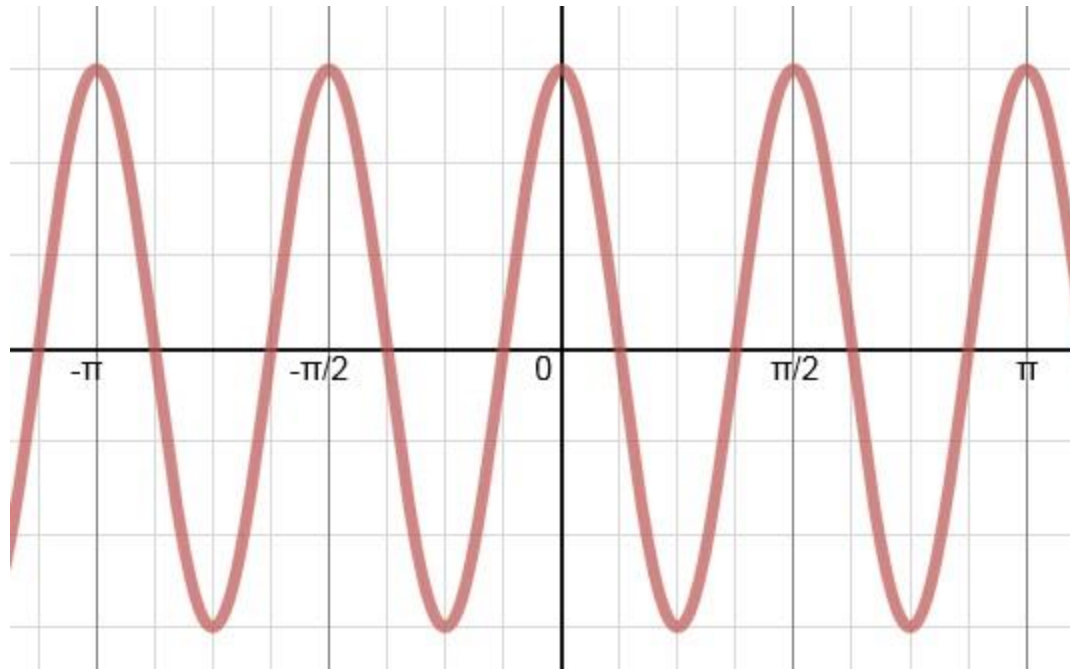
What interval is the graph increasing?
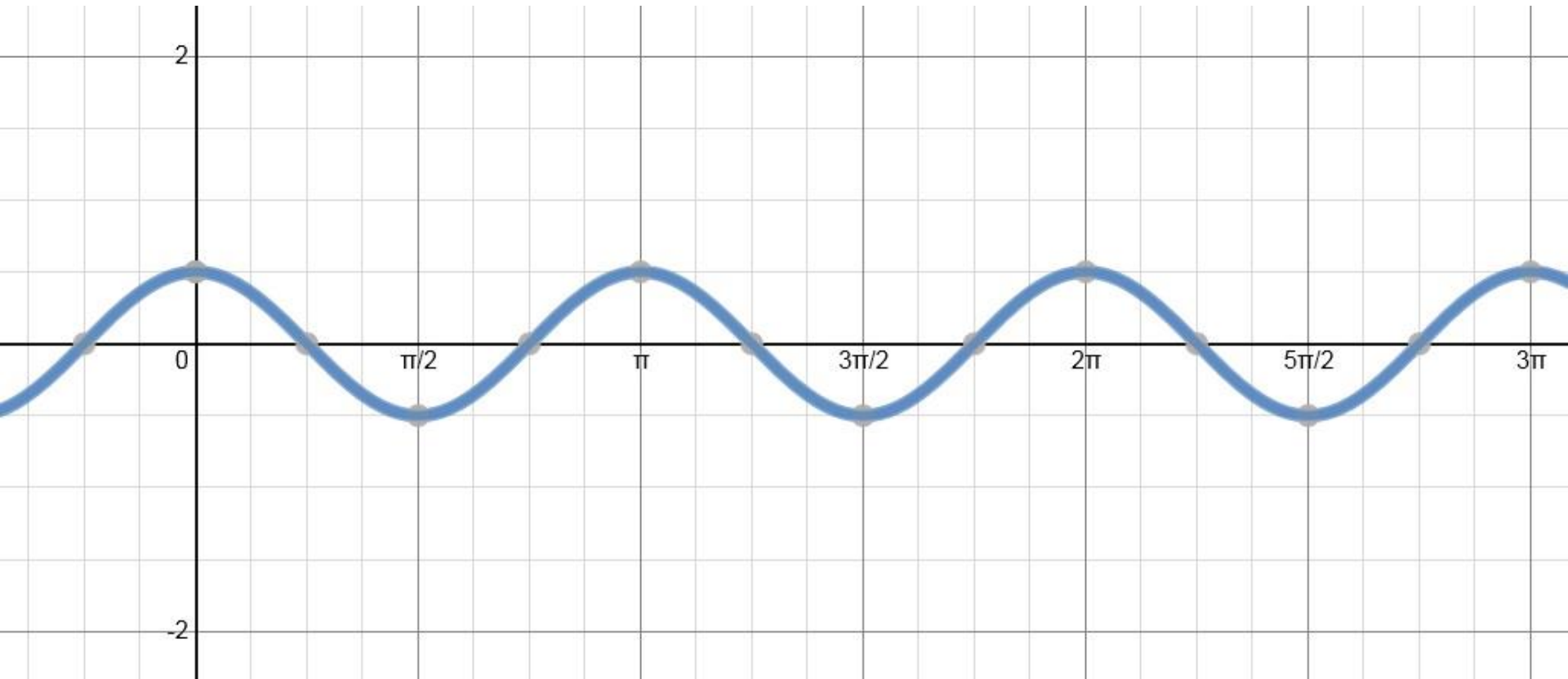
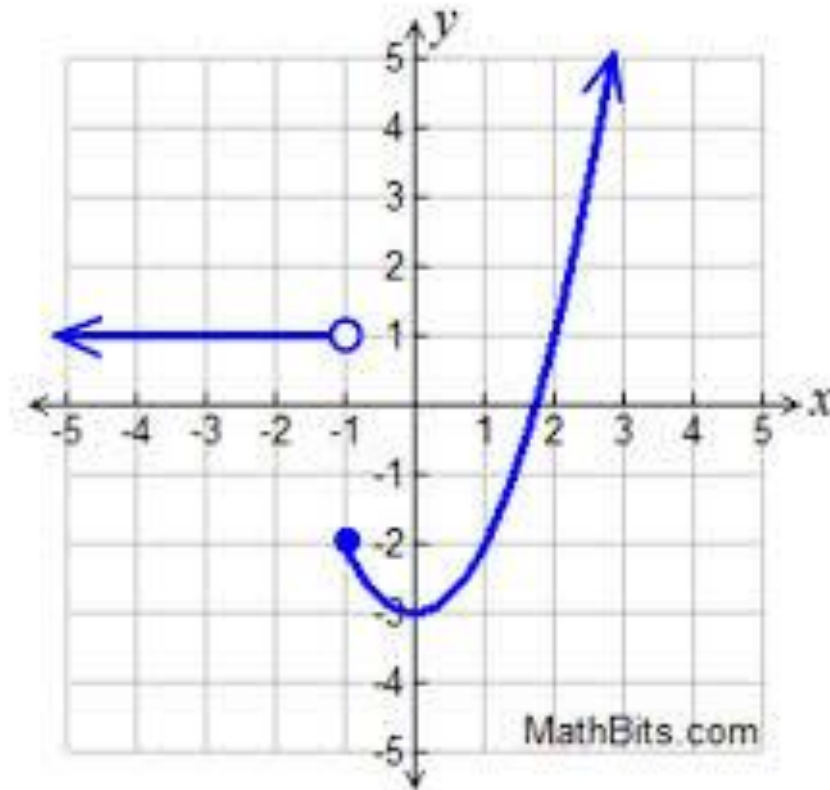# Where is the vertical asymptote located?

$$f(x) = \frac{1}{x(x-3)}$$

What is the amplitude?

What is the period of the function?

What is f(-1) for the function?
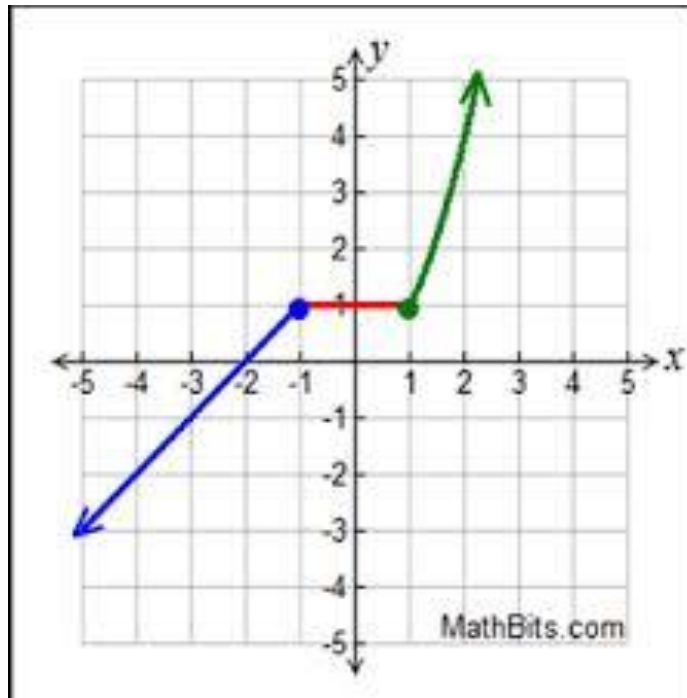

What is f(2) for the function?

Where is the function decreasing?

What is the interval where the function increases then decreases?
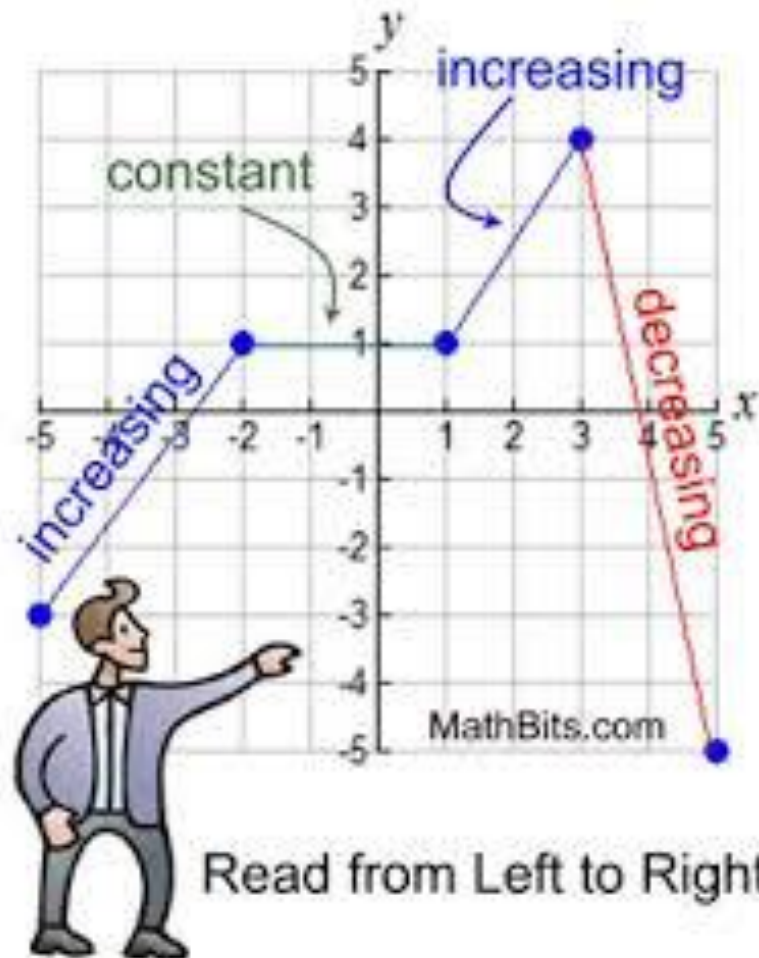
Evaluate the expression.

$$\log_{10} 1000$$

Explain the transformations that occurred?
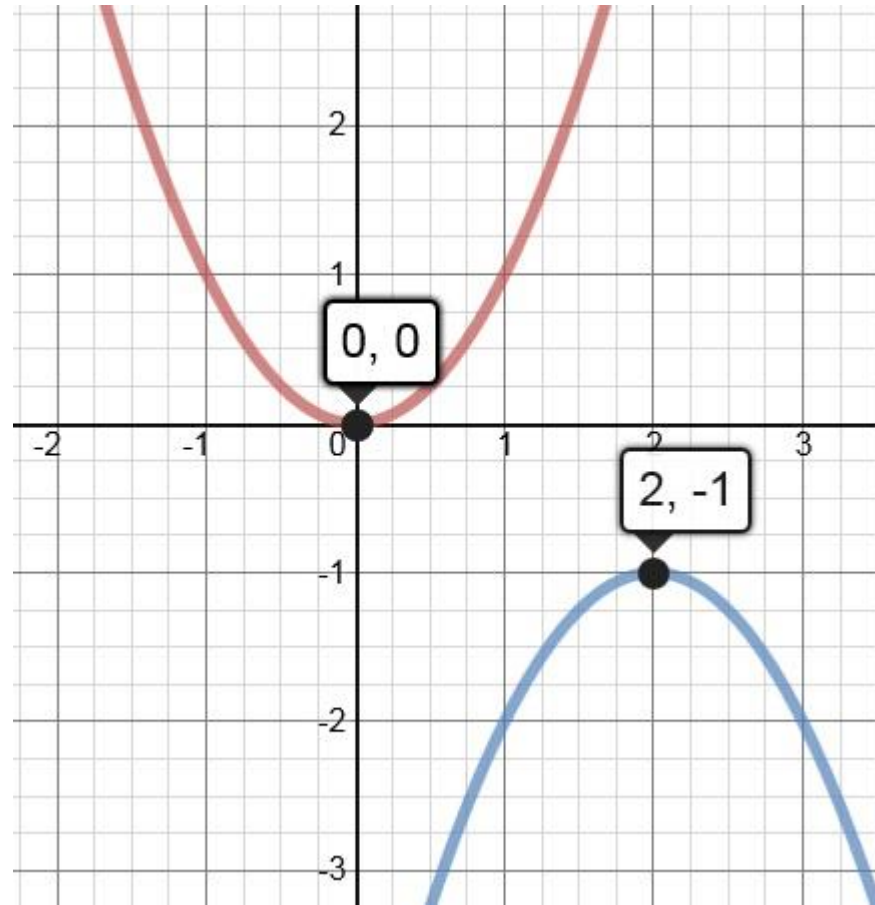
Explain the transformations that occurred?

$$f(x) = \sqrt{x} \longrightarrow f(x) = \sqrt{x+3} - 4$$

What is the period?
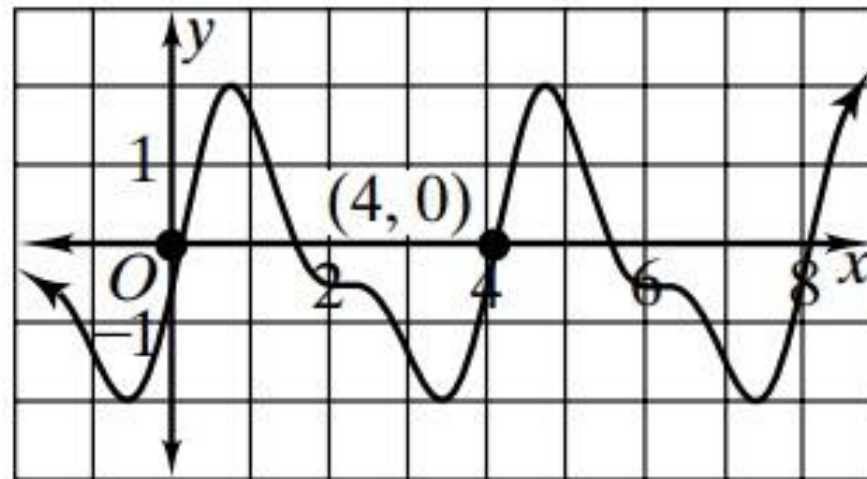
What is the amplitude?
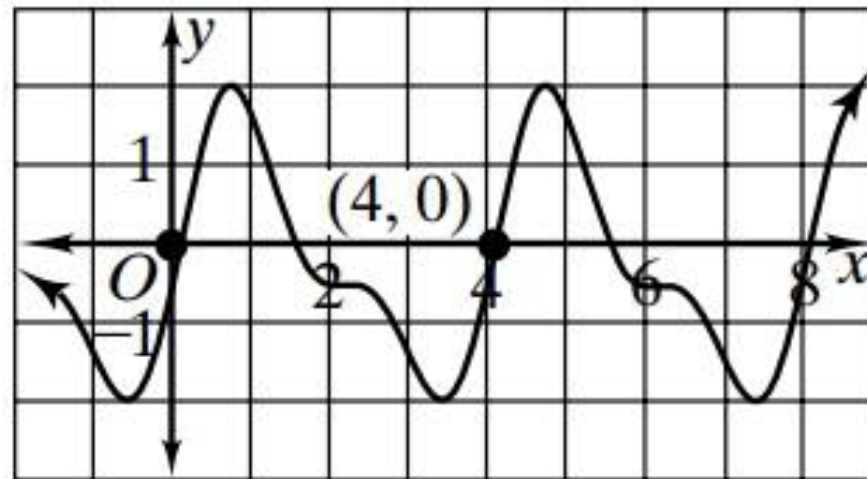
Where on the unit circle is Sine equal to:

$$-\frac{\sqrt{3}}{2}$$

Where on the unit circle is Tangent equal to 1?

Where on the unit circle is Cosine equal to:

$$-\frac{1}{2}$$

What is $\sin\left(\dfrac{7\pi}{6}\right)$ equal to?

What is the period of the function?

$$y = 3\cos \pi x$$

What does this equal?

$$\frac{Sin}{Cos}$$

$$(\sin x)^2 + (\cos x)^2 = \textcolor{red}{?}$$

What does this equal?

$$x^0 = \boxed{?}$$

Which expression is larger?

$$\left(\frac{1}{2}\right)^{-4} \qquad\qquad 2^4$$

What are these angles classified as?
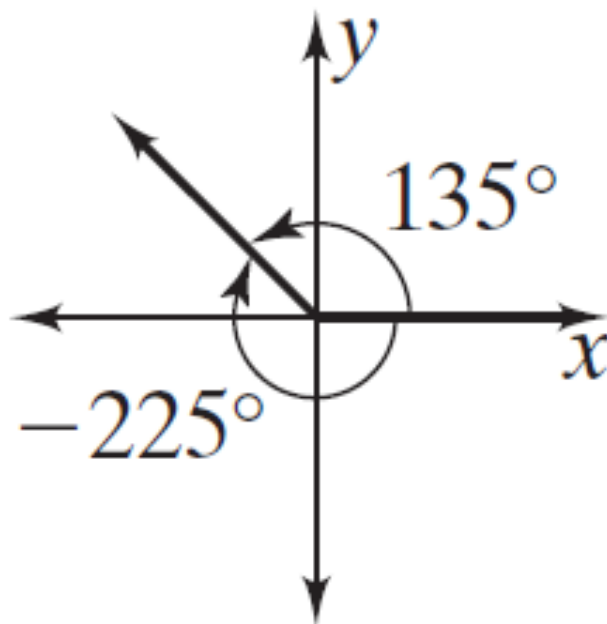
What function is this?
What is the period?
What is the amplitude?
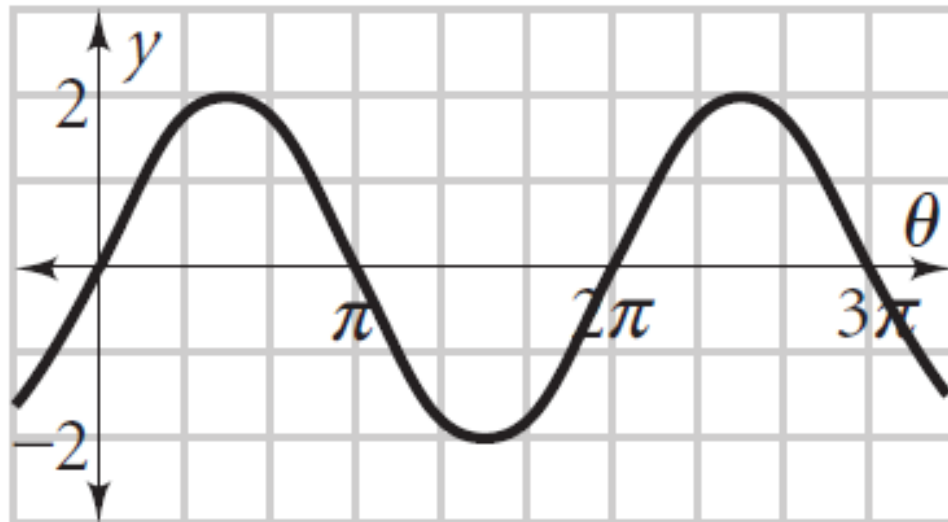
Identify the sin and cos of this angle.
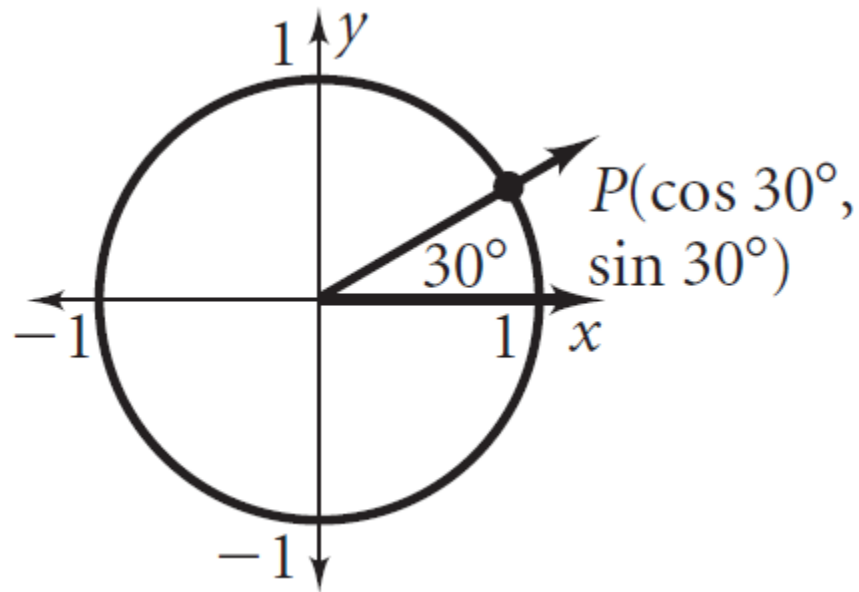
What does half the difference of the maximum and minimum describe?

What does this describe?

$y = \frac{1}{3}x + 9$

$y = x$

$x = \frac{1}{3}y + 9$
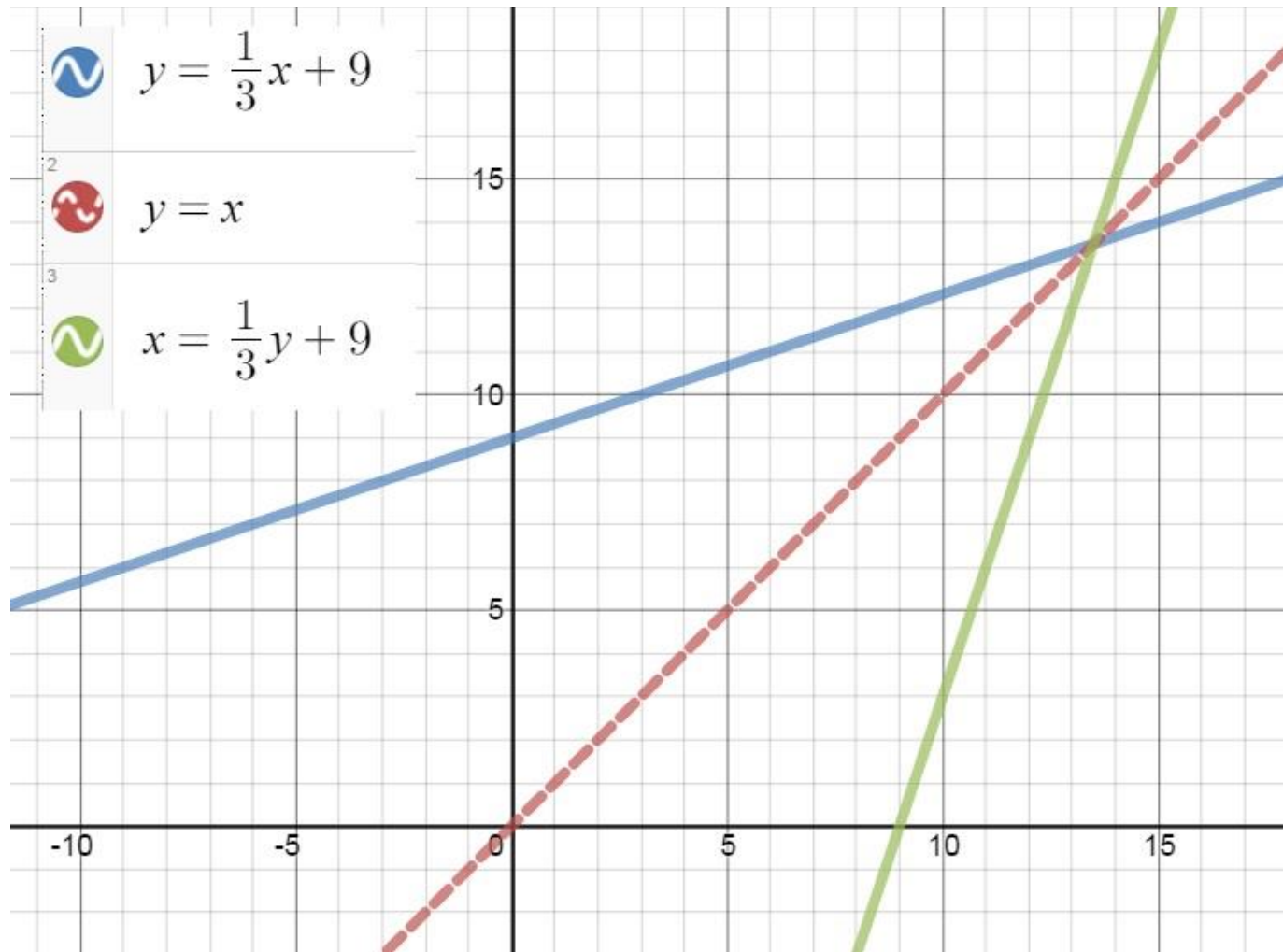
What does this cause?

$$-f(x)$$

How do you find the inverse of a function?

$$f(x) \rightarrow f(x)^{-1}$$

Which expressions are undefined for x=1?

$$f(x) = \frac{1}{x}$$

$$f(x) = \frac{x+1}{x^2-1}$$

$$f(x) = \sqrt{x-2}$$

$$y = x^2 + 1$$

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

$$y = |x|$$

$$f(x) = \sqrt[3]{x-1} + 1$$

$$f(x) = \sqrt{x}$$

Which equations are exponential growth?

$$y = 2^x \qquad y = \left(\frac{1}{3}\right)^x \qquad f(x) = \sqrt{x+2}$$

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

$$y = 2000(1.15)^x \qquad y = x^2 - 4$$

$$y = (3)^x$$

$$f(x) = \sqrt[3]{x+2} \qquad y = 500(1.065)^x$$

$$y = 2000(0.89)^x$$

$$f(x) = \frac{3}{x-2} \qquad y = 500(0.75)^x$$

Which equations are exponential decay?

$$y = 2^x \qquad\qquad y = \left(\frac{1}{3}\right)^x \qquad f(x) = \sqrt{x+2} \qquad\qquad y = \left(\frac{1}{2}\right)^x$$

$$y = (3)^x \qquad\qquad y = 2000(1.15)^x \qquad y = x^2 - 4$$

$$f(x) = \sqrt[3]{x+2} \qquad\qquad y = 500(1.065)^x$$

$$y = 2000(0.89)^x$$

$$f(x) = \frac{3}{x-2} \qquad\qquad y = 500(0.75)^x$$

What is the growth rate?

$$y = 2000(1.15)^x$$

Describe the holes or vertical asymptotes of the two graphs?

a. $y = \dfrac{x + 1}{(x - 2)(x - 3)}$

b. $y = \dfrac{(x - 2)(x - 1)}{x - 2}$

Give one positive and one negative angle co-terminal to:

$a)\ 285°$

$b)\ \dfrac{\pi}{3}$

What does the value of y approach as x increases?:
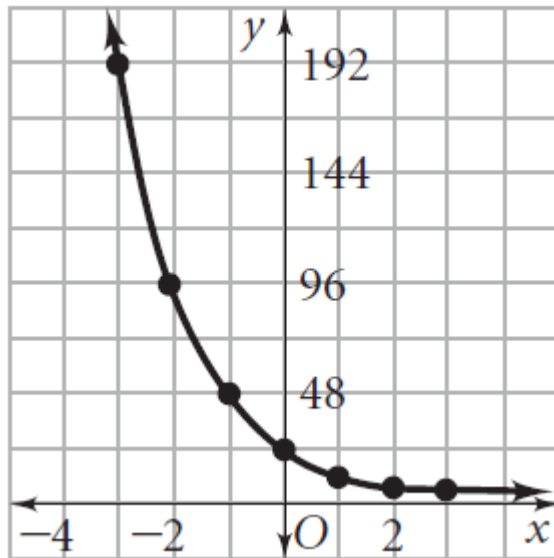
Put into exponential form

$$\log_5 25 = 2$$

Which angles have a Cosine value of:

$$-\frac{1}{2} \qquad \text{or} \qquad \frac{1}{2}$$

What is this person doing?

$$2 + \sqrt{3x - 2} = 6$$
$$\sqrt{3x - 2} = 4$$
$$3x - 2 = 16$$
$$3x = 18$$
$$x = 6$$

Evaluate these logarithms:

$$\log_6 216 = \boxed{?}$$

$$\log_3 \left(\frac{1}{27} \right) = \boxed{?}$$

$$\log_5 625 = \boxed{?}$$

Concept List

change of base formula	common logarithm	continuously compounded interest
decay factor	exponential equation	growth factor
logarithmic equation	logarithmic function	natural logarithmic function

Write the concept that best describes each exercise. Choose from the concept list above.

1. $\log 100$

2. $\log_8 3 = \dfrac{\log 3}{\log 8}$

3. $4^{2x} = 135$

4. $y = 100(2)^x$

5. $\log(2x + 1) = 5$

6. $A = Pe^{rt}$

7. $y = \log_2 x$

8. $y = 50\left(\dfrac{1}{2}\right)^{12.5}$

9. $y = \ln x$

Word(s)	Example
1. asymptote	**a.** $y = \log 5$
2. continuously compounded interest formula	**b.** $y = ab^x$
3. decay factor	**c.** 3 in $y = 7(3)^x$
4. exponential function	**d.** $A = Pe^{rt}$
5. growth factor	**e.** the x-axis for $y = \left(\dfrac{1}{2}\right)^x$
6. logarithmic function	**f.** 0.4 in $y = 2(0.4)^x$
7. inverse functions	**g.** $y = e^x$ and $\ln y = x$
8. Use of Change of Base Formula	**h.** $\log_3 15 = \dfrac{\log 15}{\log 3}$