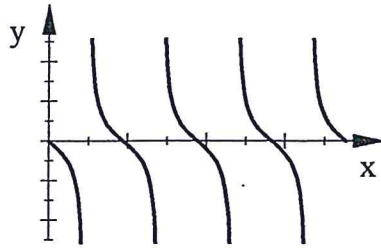


Algebra 2 Bellwork Monday, June 8, 2015

1. Write the equation of the Tangent function shown. The window is 0 to 6π



2. Use this rational function: $y = \frac{-3(x+6)(x-2)}{(x+3)(x-3)} = \frac{-3x^2 - 12x + 36}{x^2 - 9}$

a) Find the x and y-intercepts

b) Write the equation of the Horizontal Asymptote, if any.

c) Find points of discontinuity, if any, and classify them as Holes or Vertical Asymptotes.

Simplify each. Use absolute value symbols when necessary.

3. $\sqrt[4]{162a^9b^{20}c^{42}}$

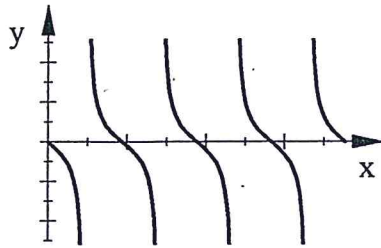
4. $\sqrt[5]{64x^{28}y^{32}z^{17}}$

5. Solve this rational equation: $\frac{x}{x+4} + \frac{7}{x-1} = \frac{x+34}{x^2+3x-4}$

6. Solve this radical equation: $\sqrt{24-4x} + 3 = x$

7. Rationalize this denominator and simplify. $\frac{12a}{\sqrt[4]{6a^3b^5c}}$

1. Write the equation of the Tangent function shown. The window is 0 to 6π



$$\text{period} = \frac{6\pi}{4} = \frac{3\pi}{2}$$

$$b = \frac{\pi}{\frac{3\pi}{2}} = \pi \cdot \frac{2}{3\pi} = \frac{2}{3}$$

$$y = -\tan \frac{2x}{3}$$

2. Use this rational function: $y = \frac{-3(x+6)(x-2)}{(x+3)(x-3)} = \frac{-3x^2 - 12x + 36}{x^2 - 9}$

a) Find the x and y-intercepts

$$x\text{-int: } x = -6, 2$$

$$y\text{-int: } y = \frac{36}{-9} = -4$$

b) Write the equation of the Horizontal Asymptote, if any.

$$HA: y = \frac{-3}{1} = -3$$

c) Find points of discontinuity, if any, and classify them as Holes or Vertical Asymptotes.

$$VA: x = \pm 3 \quad \text{Holes: None}$$

Simplify each. Use absolute value symbols when necessary.

$$3. \sqrt[4]{162a^9b^{20}c^{42}}$$

$$4. \sqrt[5]{64x^{28}y^{32}z^{17}}$$

$$= 3a^2b^5c^{10}\sqrt[4]{2ac^2}$$

$$= 2x^5y^6z^3\sqrt[5]{2x^3y^2z^2}$$

5. Solve this rational equation: $\frac{x}{x+4} + \frac{7}{x-1} = \frac{x+34}{x^2+3x-4}$

$$\frac{x}{x+4} \cdot \frac{x-1}{x-1} + \frac{7}{x-1} \cdot \frac{x+4}{x+4} = \frac{x+34}{(x+4)(x-1)}$$

$$x(x-1) + 7(x+4) = x+34$$

$$x = -6$$

$$x^2 - x + 7x + 28 = x + 34$$

$$x^2 + 5x - 6 = 0$$

$$(x+6)(x-1) = 0$$

$$x = -6, 1$$

6. Solve this radical equation: $\sqrt{24-4x} + 3 = x$

$$x = 5$$

$$(\sqrt{24-4x})^2 = (x-3)^2$$

$$24-4x = x^2-6x+9$$

$$0 = x^2-2x-15$$

$$(x-5)(x+3) = 0$$

$$x = -3, 5$$

7. Rationalize this denominator and simplify. $\frac{12a}{\sqrt[4]{6a^3b^5c}} \cdot \frac{\sqrt[4]{6^3ab^3c^3}}{\sqrt[4]{6^3ab^3c^3}}$

$$= \frac{2\sqrt[4]{6^3ab^3c^3}}{b^2c}$$

$$= \frac{12a\sqrt[4]{6^3ab^3c^3}}{\sqrt[4]{6^4a^4b^8c^4}} = \frac{12a\sqrt[4]{6^3ab^3c^3}}{6ab^2c}$$

$$= \frac{12a\sqrt[4]{6^3ab^3c^3}}{6ab^2c}$$