

SM3-A HW #11-6 (solve by graphing)

Date _____ Period _____

- 1) Without graphing, identify the (a) end-behavior, (b) the degree of the following function, and (c) the maximum number of x-intercepts that are possible for the function

$$y = -2x^4 + 4x^2 - 2x + 6$$

- 2) Solve by graphing:

Some banks give interest that grows "continuously". We call this continuous compounding. If the initial investment is \$800 at an annual interest rate of 8.25%

The equation for continuous growth is: (amount as a function of time)

$$A(t) = Pe^{rt}$$

- 3) Solve by graphing:

How far does a tornado with a circular internal wind speed of 225 miles per hour travel on the ground? Round your answer to the tenths position.

The equation for the windspeed of a tornado as a function of distance on the ground is given by the following equation where s =wind speed in the cone of the tornado (in mph), and d =distance the tornado travels while the cone is touching the ground (in miles) :

$$s = 93 \log(d) + 65$$

Solve by graphing

4) $5 = x^3 - 13x^2 + 40x + 5$

5) $6 = x^2 + 8x - 6$

- 6) Solve the following system of equations by graphing:

$$y = 3x - 4$$

$$y = -x^2 + 2$$

Using degrees, find the amplitude and period of each function.

7) $y = 9 \sin 4\theta$

Solve by graphing

8) $2 = \frac{1}{2} \sqrt{x+1}$

9) $5 = \frac{84v^2}{21v+21} + 3$

10) $\frac{1}{x} = \frac{2}{x} + \frac{x+2}{3x}$

11) $\frac{1}{x+1} = \frac{x+2}{x^2+7x+6} - 1$

Solve each question. Round your answer to the nearest hundredth.

12) Solve by graphing:

Working alone, it takes Daniel 13 hours to install a new deck. Rob can install the same deck in 10 hours. Find how long it would take them if they worked together. If you don't remember, this relation is the sum of rates to get a total rate.

$$\frac{1}{t} = \frac{1}{10} + \frac{1}{13}$$

Evaluate each function.

13) $g(x) = x^2 + 3 + x$; Find $g(-7)$

14) Rewrite in exponential form.

$$\log_{121} 11 = \frac{1}{2}$$

15) Rewrite in log form.

$$x^{-\frac{5}{13}} = y$$

Solve each equation by graphing

16) $27^{1-2n} = 243^n$

17) $\log(n^2 + 27) = \log(-11n + 3)$

18) $\log x + \log 6 = 1$

Identify the center and radius of each.

19) $(x - 12)^2 + \left(y + \frac{31}{2}\right)^2 = 9$

20) $(x - \sqrt{223})^2 + (y - 10)^2 = 5$