

SM3-A HW #3-5 (Review)

Period _____

- 1) a) Give an example of a vertex form quadratic equation.
- b) What unique information about the graph does this form of the quadratic equation give you that the other two forms do not?
- 2) a) Give an example of a standard form quadratic equation.
- b) What unique information about the graph does this form of the quadratic equation give you that the other two forms do not?
- 3) a) Give an example of an intercept form quadratic equation.
- b) What unique information about the graph does this form of the quadratic equation give you that the other two forms do not?
- 4) Which of the following quadratic equations can be solved by "taking square roots"?
- a) $y = 2x^2 - 5$ (c) $y = (x - 4)^2 - 5$
- b) $y = x^2 + 3x$ (d) $y = x^2 + 3x + 4$

Find all zeroes

5) $(3x^2 - 2)(x - 1)(x + 1)(x^2 + 1) = 0$

6) $(3x^2 + 2)(x^2 - 6) = 0$

7) $-3x^5 - 17x^3 + 72x = 0$

a) What combinations of real and imaginary zeroes are possible for the following equation?

b) What is the "end behavior" of the graph?

8) $-6x^6 - 5x^2 - 5x + 25 = 0$

a) What combinations of real and imaginary zeroes are possible for the following equation?

b) What is the "end behavior" of the graph?

a) Find the zeroes

b) Determine the end-behavior,

c) Draw the general shape of the graph.

9) $y = 2x^2(5x - 2)(x + 1)^4$

10) $y = -4(x + 4)^2(3x - 5)(x - 5)^3$

11) $y = -5x(2x + 1)^2(x - 2)(x + 6)^2$

12) $y = 7x(5x + 8)(x - 3)$

Find all zeros.

13) $f(x) = 5x^4 - 21x^2 + 18$

14) $f(x) = 3x^4 - 11x^2 + 10$

Find each product.

15) $(6n^2 + 6n - 1)(n^2 + 8n + 1)$

16) $(5x^2 - 5x + 7)(x^2 + 6x - 8)$

17) a) Find the x-intercepts

b) Convert to Standard Form

$$y = -2(5x + 4)(x - 5)$$

18) a) What is the y-intercept? (Give your answer as an ordered pair.)

b) Convert to intercept form.

$$y = x^2 - 6x - 16$$

19) through: $(0, 4)$ and $(-2, 4)$

20) through: $(2, 1)$ and $(-5, 5)$

21) a) Convert to intercept form

b) What are the zeroes?

$$y = 3x^2 + 20x - 32$$

22) a) Convert the following equations to vertex form.

b) Solve the resulting equations by taking square roots.

$$y = x^2 - 6x + 24$$

23) $y = -4\sqrt{x - 3} + 1$

a) Domain = ?

b) Range = ?

24) $y = -3|x + 4| - 5$

a) Domain = ?

b) Range = ?