

Algebra II 4.4 – 4.7 TEST REVIEW

Solve each quadratic equation. Be sure to express your answer in terms of i .

1. $4x^2 + 25 = 0$

2. $x^2 = -98$

3. $x^2 + 75 = 0$

4. $3x^2 = -108$

Performing math operations with complex numbers. Write answer in $a+bi$ form.

5. $(7+6i) - (-3+8i)$

6. $(5+3i) + (-7-9i)$

7. $(1+2i)(1-2i)$

8. $(9+2i)(4+2i)$

9. $-3i(5-7i)$

10. $(2+3i)^2$

Simplify:

11. $\frac{2+4i}{3i}$

12. $\frac{1+6i}{1-2i}$

The find the value of "c" that would make the expression a perfect square trinomial. Then write the perfect square factor.

13) $x^2 + 14x + c$

14) $x^2 - 22x + c$

15) $x^2 + 7x + c$

c- _____

c- _____

c- _____

Binomial: _____

Binomial: _____

Binomial: _____

Use completing the square to solve each quadratic equation.

16) $x^2 + 4x + 11 = 0$

17) $x^2 + 6x = 9$

18) $x^2 - 6x + 18 = 0$

19) $x^2 - 10x + 24 = 0$

Determine the number and type of solutions using the discriminant.

20) $x^2 + 8x = -16$

21) $x^2 + 3 = 10x$

22) $4x^2 + 2x = -9$

Discriminant: _____

Discriminant: _____

Discriminant: _____

Type of Solutions:

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Solve the following using the quadratic formula.

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

23) $f(x) = 2x^2 + x - 3$

24) $f(x) = 3x^2 - 4x - 1$

25) $f(x) = 5x^2 - 4x - 1$

26) $f(x) = x^2 + 2x + 3$

Write each function in vertex form.

27) $y = x^2 + 6x + 2$

28) $y = 2x^2 - 4x - 3$

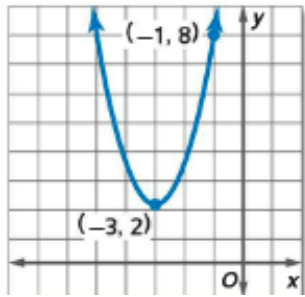
Write each function in vertex form.

29) $y = -4x^2 - 24x - 15$

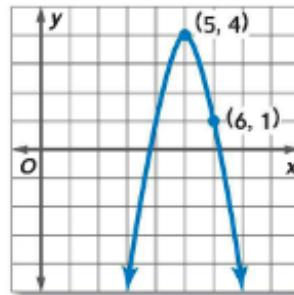
30) $y = x^2 - 10x + 28$

Write an equation in vertex form for each parabola.

31)



32)



33) Write the quadratic function that has a vertex at (-4,0) and passes through the point (-2,6).

34) Write the quadratic function that has a vertex at (6,1) and passes through the point (7,10).