

Name: _____ Spiral Review #4 Due 9.30

- Identify the vertex of the following quadratic : $y = 2(x + 3)^2 - 1$
 - (2,1)
 - (-3,1)
 - (-3,-1)
 - (3,-1)
- Convert from standard form to vertex form: $y = -3x^2 + 18x - 17$
 - $y = (x + 18)^2 - 17$
 - $y = -3(x - 3)^2 + 10$
 - $y = -3(x + 3)^2 - 10$
 - $y = 3(x + 3)^2 - 10$
- If the value of the discriminant is less than zero, the quadratic equation has which number and type of roots:
 - 2 real solutions
 - 3 real solutions
 - 1 real solution
 - 2 imaginary solutions
- Simplify the following: $3(4 - 5i) - 5(7 + 7i)$
 - $-23 - 50i$
 - $23 + 50i$
 - $47 + 20i$
 - $-20 + 47i$
- Which equation models the quadratic that transforms the parent function $y = x^2$ to shift left 5 units and shift up 3 units?
 - $f(x) = 5(x - 5)^2 - 3$
 - $f(x) = (x + 5)^2 - 3$
 - $f(x) = 3(x + 3)^2 - 5$
 - $f(x) = (x + 5)^2 + 3$
- Find the coordinates of the vertex for the quadratic equation: $f(x) = -4x^2 - 10x + 7$
 - (10,7)
 - $(\frac{4}{5}, \frac{4}{53})$
 - $(\frac{5}{2}, -43)$
 - $(-\frac{5}{4}, \frac{53}{4})$
- Simplify the following radical: $\sqrt{-32}$
 - $2i\sqrt{8}$
 - $\pm 4i\sqrt{2}$
 - $\pm 2i\sqrt{8}$
 - $\pm i\sqrt{32}$
- Solve using the quadratic formula: $5x^2 + 3x = -1$
 - $x = \frac{-3 \pm \sqrt{11}}{10}$
 - $x = \frac{-3 \pm i\sqrt{11}}{10}$
 - $x = \frac{-3 \pm \sqrt{29}}{10}$
 - $x = \frac{-3 \pm i\sqrt{29}}{10}$

9. Which equation is the parabola with a focus of $(0, \frac{1}{8})$ and a vertex at the origin?
- a) $y = \frac{1}{2}x^2$
 - b) $y = \frac{1}{8}x^2$
 - c) $y = \frac{1}{4}x^2$
 - d) $y = 2x^2$
10. Simplify: $4(5 - 7i)(3 + 4i)$
- a) $172 - 4i$
 - b) $4i - 172$
 - c) $60 - 112i$
 - d) $20 - 21i$
11. A rectangle has an area of $3m^2 + 22m + 35$. Its length is $(m + 5)$. What is the expression that represents the width?
- a) $(m + 7)$
 - b) $(3m + 5)$
 - c) $(3m + 7)$
 - d) $(7m + 3)$
12. Identify the solutions to the following equation: $2x^2 + 9x = 35$
- a) $\{-5, 14\}$
 - b) $\{\frac{5}{2}, -7\}$
 - c) $\{5, -14\}$
 - d) $\{-\frac{5}{2}, 7\}$
13. Which is the equation, in vertex form, of the parabola passing through the points: $(-6, -7)$, $(-11, -2)$, $(-8, 1)$?
- a) $y = (x - 9)^2 - 2$
 - b) $y = -(x - 9)^2 + 2$
 - c) $y = -(x + 9)^2 + 2$
 - d) $y = (x + 9)^2 + 2$
14. What type of equation can best be modeled by the following data set?
 $(0, 3), (8, 3), (-4, -1), (4, 4), (-6, -3), (10, 1)$
- a) Linear
 - b) Quadratic
 - c) Exponential
 - d) None of the above
15. Which equation would best fit the following data set?
 $(-1, 8), (1, 2), (-2, 16), (3, 0.5), (0, 4), (2, 1)$
- a) $y = -2.87x + 6.69$
 - b) $y = 4 \cdot (0.5)^x$
 - c) $y = 0.88x^2 - 3.76x + 4.32$
 - d) $y = -3x + 7$