

_____ is quite confident solving quadratics.

Date _____

9.2 W/S

Homework will be graded for accuracy. To receive full credit, SHOW ALL WORK. Check your answers in class. Redo problems that were incorrect and ask questions if you cannot find your mistake.

Describe how I find the following from a graph:

1. Roots:
2. Vertex:
3. Line of symmetry:

If given a quadratic equation in the vertex form $y = a(x - h)^2 + k$, explain how to find:

4. Vertex Coordinate:
5. Equation of the Line of symmetry:
6. Roots:
7. Find the equation of the axis of symmetry and the coordinates of the vertex for the parabola given by each function.

_____ Vertex.

a. $f(x) = x^2 + 4x - 5$, with x -intercepts -5 and 1

_____ Line of Symmetry.

_____ Vertex

b. $f(x) = x^2 + 7x - 30$ with x -intercepts -10 and 3

_____ line of symmetry

8. Find the roots of each function, to the nearest hundredth, by looking at a graph, zooming in on a calculator table or both.

_____ a. $f(x) = x^2 + 6x + 5$

_____ c. $f(x) = -2x^2 + x + 3$

_____ b. $f(x) = -3(x + 1)^2 + 2$

_____ d. $f(x) = 6(x - 2)^2$

9. The equation of a parabola is $y = x^2 - 7x + 4$

_____ a. Use a graph or table to find the x -intercepts.

_____ b. Find the coordinates of the vertex.

_____ c. Write the equation of the axis of symmetry.

_____ d. Write the equation in vertex form, $y = a(x - h)^2 + k$

10. Solve each equation symbolically, and check your answers by substituting back into the equation. Leave solution as a rational or radical answer.

_____ a. $\frac{1}{3}(x+5)^2 + 4 = 7$

Check 1st Solution
 $\frac{1}{3}(\text{_____} + 5)^2 + 4 = 7$

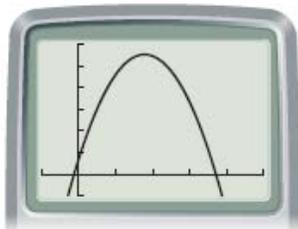
Check 2nd Solution
 $\frac{1}{3}(\text{_____} + 5)^2 + 4 = 7$

_____ b. $(x+5)^2 + 13 = 16$

Check 1st Solution
 $(\text{_____} + 5)^2 + 13 = 16$

Check 2nd Solution
 $(\text{_____} + 5)^2 + 13 = 16$

11. Sean hits a baseball, and its height in the air is given by the equation $y = -16x^2 + 58x + 3$, where x is in seconds and y is in feet. Use the graph and the tables to help you answer these questions.



$[-1, 5, 1, -10, 60, 10]$

| X | Y1 |
|------|--------|
| 3.65 | 1.54 |
| 3.66 | .9504 |
| 3.67 | .3576 |
| 3.68 | -.2384 |
| 3.69 | -.8376 |
| 3.7 | -1.44 |
| 3.71 | -2.046 |

Y1 $-16X^2 + 58X + 3$

| X | Y1 |
|------|--------|
| 1.78 | 55.546 |
| 1.79 | 55.554 |
| 1.8 | 55.56 |
| 1.81 | 55.562 |
| 1.82 | 55.562 |
| 1.83 | 55.558 |
| 1.84 | 55.55 |

Y1 $-16X^2 + 58X + 3$

_____ a. When does the ball hit the ground?

_____ b. At what time is the ball at its highest point?

_____ c. How high is the ball at its highest point?

12. The two graphs at right show aspects of a ball thrown into the air. The first graph shows its height h in meters at any time t in seconds. The second graph shows its velocity v in meters per second at any time t .

a. What does the first graph tell you about the situation?
 Use numbers to be as specific as you can.

b. What does the second graph tell you about the situation?
 Use numbers to be as specific as you can.

c. Give a real-world meaning in this context for the negative values for velocity.

d. Write your name as the answer to this question.

e. What can you say about the height of the ball when the velocity is 10 meters per second and when it is -10 meters per second?

