

1. Find the coordinates of the vertex and the intercepts of the following quadratic function. When necessary, approximate the x-intercepts to the nearest tenth.

$$f(x) = x^2 - 8x + 7$$

The vertex is .

(Type an ordered pair using integers or simplified fractions.)

The y-intercept is .

(Type an ordered pair using integers or simplified fractions.)

Select the correct choice below and fill in any answer boxes within your choice.

☐ A. The x-intercepts are .

(Simplify your answer. Type an ordered pair, using integers or fractions. Use a comma to separate answers as needed.)

☐ B. There are no x-intercepts.

2. Find the coordinates of the vertex, the y-intercept, and the x-intercepts (if any exist) of the following quadratic function.

$$g(x) = -x^2 - 8x + 33$$

The vertex of the quadratic function $g(x)$ is .

(Type an ordered pair.)

The y-intercept of the quadratic function $g(x)$ is .

(Type an ordered pair.)

Select the correct choice below and fill in any answer boxes within your choice.

☐ A. The x-intercept(s) of the quadratic function $g(x)$ is(are) .

(Type an ordered pair. Use a comma to separate answers as needed.)

☐ B. There is no x-intercept.

Student: [redacted]
Date: 9/3/13
Time: 6:07 AM

Course: MATH 1010 ADLJ Sem 13
Book: Tobey: Beginning and Intermediate
Algebra, 4e

Assignment: Week 14: Homework 9.5

3.

Find the coordinates of the vertex and the intercepts of the following quadratic function. When necessary, approximate the x-intercepts to the nearest tenth.

$$p(x) = 3x^2 + 6x + 2$$

The vertex is .
(Type an ordered pair using integers or simplified fractions.)

The y-intercept is .
(Type an ordered pair using integers or simplified fractions.)

Select the correct choice below and fill in any answer boxes within your choice.

- ☐ A. The x-intercepts are .
(Type ordered pairs using integers or decimals. Round values to the nearest tenth. Use a comma to separate answers.)
- ☐ B. There are no x-intercepts.

Student: [redacted]
Date: 9/13/13
Time: 6:07 AM

Instructor: [redacted]
Course: MATH 101
Book: Beginning and Intermediate Algebra, 9e

Assignment: Week 14: Homework 9.5

4. Find the vertex, the y-intercept, and the x-intercepts (if any exist), and then graph the function.

$$f(x) = x^2 - 4x + 4$$

The vertex is .

(Type an ordered pair.)

The y-intercept is .

(Type an ordered pair.)

Select the correct choice below and, if necessary, fill in the answer box within your choice.

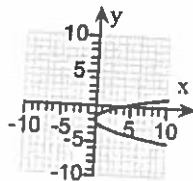
- ☐ A. The x-intercept(s) is/are .

(Type an ordered pair. Use a comma to separate answers as needed.)

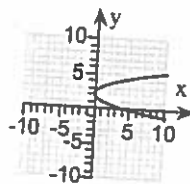
- ☐ B. The graph has no x-intercepts.

Graph the function. Choose the correct graph below.

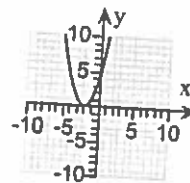
☐ A.



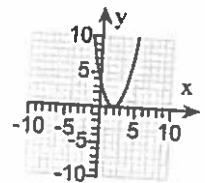
☐ B.



☐ C.



☐ D.



Student: [redacted]
Date: 9/1/15
Time: 6:07 AM

Course: MATH 110 A013 Sum 13
Book: Tolney: Beginning and Intermediate
Algebra, 4e

Assignment: Week 14: Homework 9.5

5. Find the vertex, the y-intercept, and the x-intercepts (if any exist), and then graph the function.

$$p(x) = x^2 - 10x + 16$$

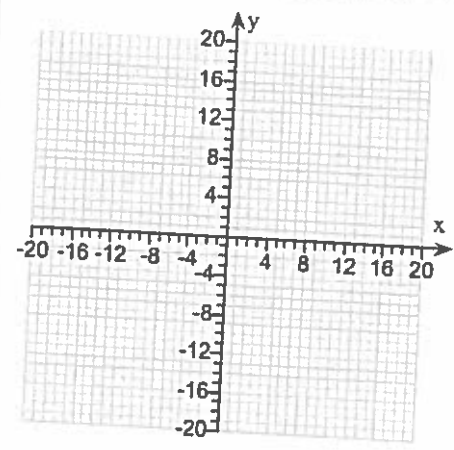
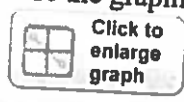
The vertex of $p(x)$ is .
(Type an ordered pair.)

The y-intercept of the quadratic function $p(x)$ is .
(Type an ordered pair.)

Select the correct choice below and fill in any answer boxes within your choice.

- ☐ A. The x-intercept(s) of the quadratic function $p(x)$ is(are) .
(Type an ordered pair. Use a comma to separate answers as needed.)
- ☐ B. There is no x-intercept.

Use the graphing tool to graph the function.



Student: [REDACTED]
Date: 9/2/15
Time: 6:07 AM

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Book: Tobey: Beginning and Intermediate
Algebra 4e

Assignment: Week 14: Homework 9.5

6. Find the vertex, the y-intercept, and the x-intercepts (if any exist), and then graph the function.

$$p(x) = x^2 + 6x + 8$$

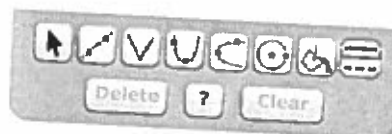
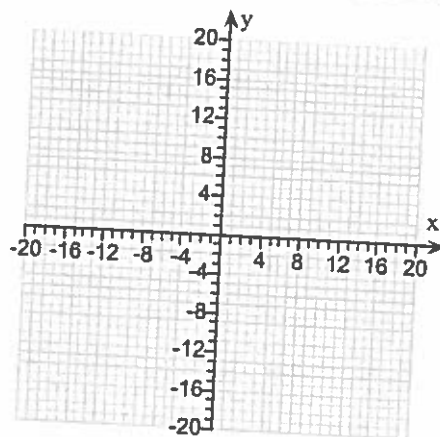
The vertex of $p(x)$ is .
(Type an ordered pair.)

The y-intercept of the quadratic function $p(x)$ is .
(Type an ordered pair.)

Select the correct choice below and fill in any answer boxes within your choice.

- ☐ A. The x-intercept(s) of the quadratic function $p(x)$ is(are) .
(Type an ordered pair. Use a comma to separate answers as needed.)
- ☐ B. There is no x-intercept.

Use the graphing tool to graph the function.



Student: [redacted]
Date: 9/3/13
Time: 9:07 AM

Author: [redacted]
Course: MATH10 A013 Sem 15
Book: Tobey: Beginning and Intermediate
Algebra, 4e

Assignment: Week 14: Homework 9.5

7. Find the vertex, the y-intercept, and the x-intercepts (if any exist), and then graph the function.

$$p(x) = -x^2 + 8x - 15$$

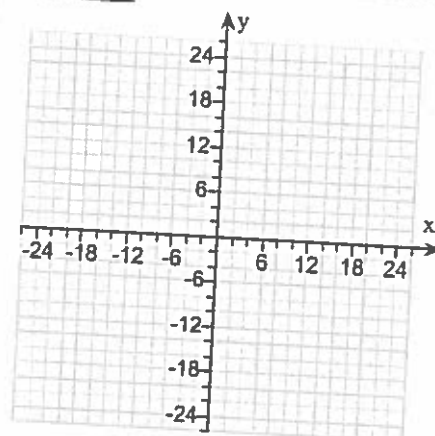
The vertex of $p(x)$ is .
(Type an ordered pair.)

The y-intercept of the quadratic function $p(x)$ is .
(Type an ordered pair.)

Select the correct choice below and fill in any answer boxes within your choice.

- ☐ A. The x-intercept(s) of the quadratic function $p(x)$ is(are) .
(Type an ordered pair. Use a comma to separate answers as needed.)
- ☐ B. There is no x-intercept.

Use the graphing tool to graph the function.



Student: [REDACTED]
Date: 2/3/15
Time: 9:27 AM

Course: MA (H) 0 A013 Sum 15
Book: Tobey: Beginning and Intermediate
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Assignment: Week 14: Homework 9.5

8. Find the vertex, the y-intercept, and the x-intercepts (if any exist), and then graph the function.

$$r(x) = 4x^2 + 8x + 5$$

The vertex is .

(Type an ordered pair using integers or simplified fractions.)

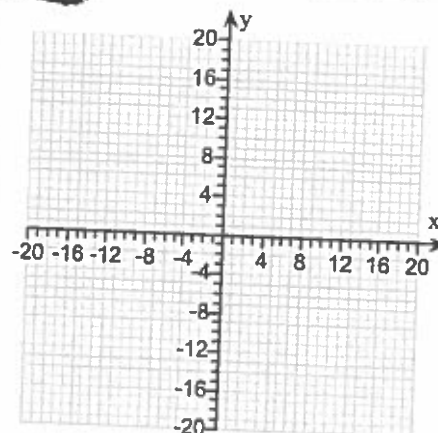
The y-intercept is .

(Type an ordered pair using integers or simplified fractions.)

Select the correct choice below and fill in any answer boxes within your choice.

- ☐ A. The x-intercepts are .
- (Type an ordered pair, using integers or fractions. Use a comma to separate answers as needed.)
- ☐ B. There are no x-intercepts.

Use the graphing tool to graph the function.



Student: [REDACTED]
Date: 9/1/15
Time: 6:07 AM

Course: MATH 10 A/13 Jan 15
Book: Tobey: Beginning and Intermediate
Algebra, 4e

Assignment: Week 14: Homework 9.5

9. Find the vertex, the y-intercept, and the x-intercepts (if any exist), and then graph the function.

$$f(x) = x^2 - 16$$

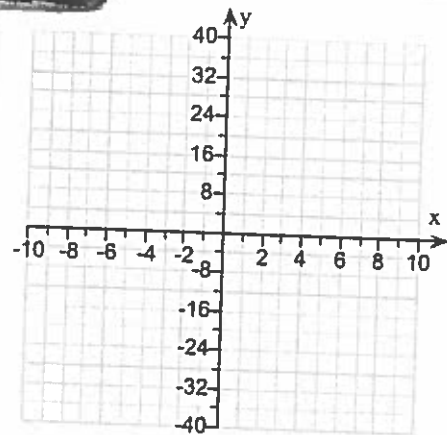
The vertex of $f(x)$ is .
(Type an ordered pair.)

The y-intercept of the quadratic function $f(x)$ is .
(Type an ordered pair.)

Select the correct choice below and fill in any answer boxes within your choice.

- ☐ A. The x-intercept(s) of the quadratic function $f(x)$ is (are) .
(Type an ordered pair. Use a comma to separate answers as needed.)
- ☐ B. There is no x-intercept.

Use the graphing tool to graph $f(x)$.



10. Determine, without graphing, whether the given quadratic function has a maximum value or a minimum value and then find the value.

$$f(x) = -2x^2 + 12x - 7$$

Does the quadratic function f have a minimum value or a maximum value?

- ☐ The function f has a minimum value.
- ☐ The function f has a maximum value.

What is this minimum or maximum value?

(Simplify your answer.)

Student: [REDACTED]
Date: 9/3/15
Time: 6:07 AM

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Course: Math 101: Sum 15
Book: Tobey: Beginning and Intermediate
Algebra, 4e

Assignment: Week 14: Homework 9.5

11. Determine, without graphing, whether the given quadratic function has a maximum value or a minimum value and then find the value.

$$f(x) = 2x^2 + 12x - 8$$

Does the quadratic function f have a minimum value or a maximum value?

- ☐ The function f has a maximum value.
☐ The function f has a minimum value.

What is this minimum or maximum value?

(Simplify your answer.)

12. Determine, without graphing, whether the given quadratic function has a maximum value or a minimum value and then find the value.

$$f(x) = 2x^2 + 20x - 4$$

Does the quadratic function f have a minimum value or a maximum value?

- ☐ The function f has a maximum value.
☐ The function f has a minimum value.

What is this minimum or maximum value?

(Simplify your answer.)

13. Suppose that the manufacturer of a DVD player has found that, when the unit price is p dollars, the revenue R (in dollars) as a function of the price p is $R(p) = -2.5p^2 + 700p$. (a) For what price will the revenue be maximized?
(b) What is the maximum revenue?

(a) The price for which the revenue will be maximized is $p = \$$.
(Simplify your answer.)

(b) The maximum revenue is $R = \$$.
(Simplify your answer.)

14. The daily profit P in dollars of a company making tables is described by the function $P(x) = -6x^2 + 312x - 3672$, where x is the number of tables that are manufactured in 1 day. Use this information to find $P(22)$.

$P(22) = \square$ (Simplify your answer.)

15. The daily profit P in dollars of a company making tables is described by the function $P(x) = -5x^2 + 260x - 3060$, where x is the number of tables that are manufactured in 1 day. The maximum profit of the company occurs at the vertex of the parabola. How many tables should be made per day in order to obtain the maximum profit for the company? What is the maximum profit?

To obtain the maximum profit for the company, $\square$ tables should be made per day.

The maximum profit of the company is \$ $\square$ per day.

16. Susan throws a softball upward into the air at a speed of 32 feet per second from a 152-foot platform. The distance upward that the ball travels is given by the function $d(t) = -16t^2 + 32t + 152$. What is the maximum height of the softball? How many seconds does it take to reach the ground after first being thrown upward? (Round your answer to the nearest tenth.)

The maximum height of the softball is $\square$ feet.

It takes $\square$ seconds to reach the ground after first being thrown upward.
(Round your answer to the nearest tenth.)