Student: _____	**Instructor:** Ray Brown	**Assignment:** ch18rev HW
Date: _____	**Course:** M055 Sum17 CAI 10054 G41	

1. Click the link below to watch a video reviewing concepts in this chapter. You are encouraged to watch the video and work problems with the instructor to help ensure your understanding of the material.

   Chapter 18 Review[1]

   ○   True - I understand the concept.
   ○   False - I am not understanding the concept and intend to seek assistance.

   1: http://www.screencast.com/t/hgbyEYKpQx0

   Answer: True - I understand the concept.

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2. Find the vertex of the parabola.

   $$f(x) = 6x - x^2$$

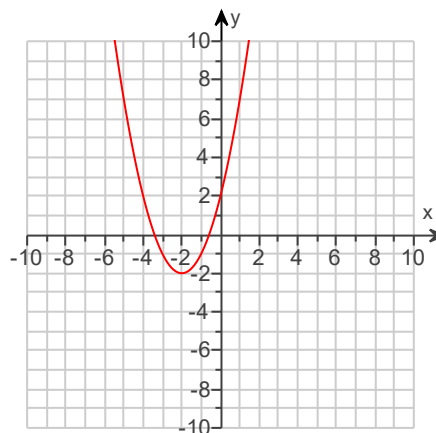   The vertex of the given parabola is _____. (Type an ordered pair.)

   Answer: (3,9)

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3. Use the given graph of f to evaluate the expressions.

   $f(-2)$ and $f(0)$

   $f(-2) =$ _____

   $f(0) =$ _____

   Answers -2

              2

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4. Do the following for the given f(x).
   (a) Identify the vertex and axis of symmetry on the graph of
   y = f(x).
   (b) Graph y = f(x).
   (c) Evaluate f(− 5) and f(4).

   $$f(x) = \frac{1}{9}x^2$$

(a) The vertex is _____ .
(Type an ordered pair.)

The equation of the axis of symmetry is
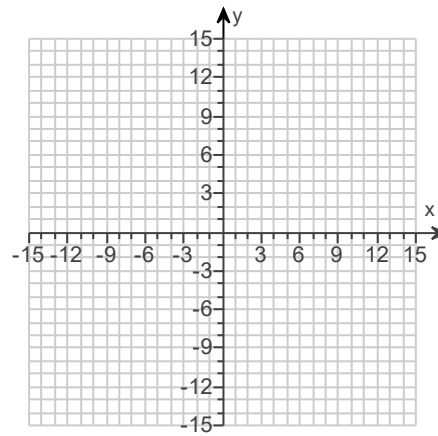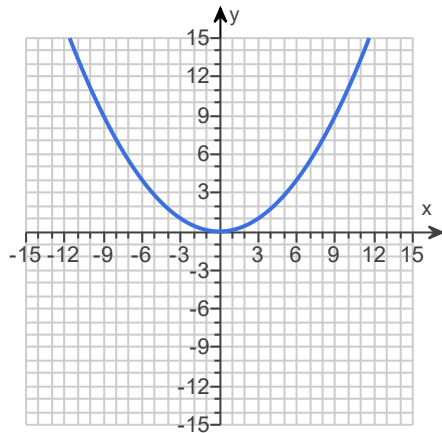_____ . (Type an equation.)

(b) Use the graphing tool to graph the parabola.

(c) f(− 5) = _____

f(4) = _____

Answers (0,0)

       x = 0

$$\frac{25}{9}$$

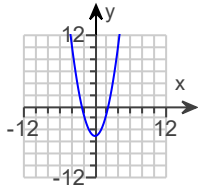$$\frac{16}{9}$$

5.   Do the following for $f(x) = -(x-5)^2$.

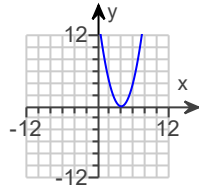(a) Graph y = f(x).
(b) Identify the vertex and axis of symmetry.
(c) Evaluate f(−2) and f(3).

(a)   Choose the correct graph below.

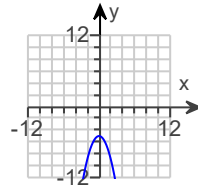○ **A.**   ○ **B.**   ○ **C.**   ○ **D.**

(b)   Identify the vertex.

The vertex is _____ . (Type an ordered pair.)

Identify the axis of symmetry.

The axis of symmetry is x = _____ .

(c)   f(−2) = _____

      f(3) = _____

   Answers

      D.

      (5,0)

      5

      − 49

      − 4

6. Do the following for $f(x) = x^2 - x - 1$.

   (a) Graph $y = f(x)$.
   (b) Identify the vertex and axis of symmetry.
   (c) Evaluate $f(-2)$ and $f(3)$.

   (a) Choose the correct graph below.

   ○ **A.**   ○ **B.**   ○ **C.**   ○ **D.**
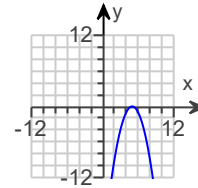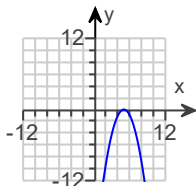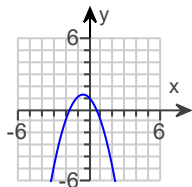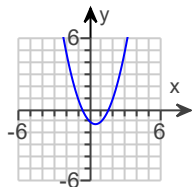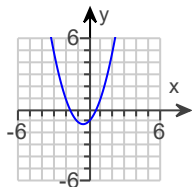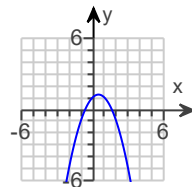
   (b) Identify the vertex.

   The vertex is _____ .
   (Type an ordered pair.)

   Identify the axis of symmetry.

   The axis of symmetry is $x =$ _____ .

   (c) $f(-2) =$ _____

        $f(3) =$ _____

   Answers

           B.

           $(0.5, -1.25)$

           0.5

           5

           5

7. Solve by factoring.

    $r^2 + 3r - 54 = 0$

   The solution(s) is/are $r =$ _____ .
   (Type an integer or a simplified fraction. Use a comma to separate answers as needed.)

   Answer: $6, -9$

8. Solve by factoring.

$5x^2 + 13x - 46 = 0$

The solution(s) is(are) x = _____ . (Use a comma to separate answers as needed.)

Answer: $2, -\dfrac{23}{5}$

9. Use the square root property to solve the equation.

$(x + 7)^2 = 36$

The solution(s) is/are x = _____ .
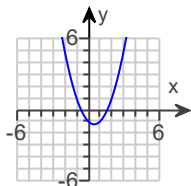(Simplify your answer. Type an integer or a fraction. Use a comma to separate answers as needed.)

Answer: $-1, -13$

10. Use the square root property to solve.

$(x - 6)^2 = 49$

The solution(s) is(are) x = _____ .
(Simplify your answer. Type an exact answer, using radicals as needed. Use integers or fractions for any numbers in the expression. Use a comma to separate answers as needed.)

Answer: $-1, 13$

11. In the paper portion of the test you are asked to solve by completeing the square. While the problem can be solved by other methods, credit will only be given if completing the square is used.

Find the term that should be added to the expression to form a perfect square trinomial. Write the resulting perfect square trinomial in factored form.

$x^2 + 5x$

What is the constant term?

_____ (Type an integer or a simplified fraction.)

What is the factored form of the trinomial?

_____ (Use integers or fractions for any numbers in the expression.)

Answers $\dfrac{25}{4}$

$\left(x + \dfrac{5}{2}\right)^2$

12.　Solve by completing the square.

$$x^2 + 4x = 45$$

The solution(s) is(are) x = _____ .
(Simplify your answer. Type an integer or a fraction. Use a comma to separate answers as needed.)

　Answer:　$-9, 5$

13.　Solve by completing the square.

$$x^2 + 8x - 7 = 0$$

The solution(s) is/are _____ .
(Type an exact answer, using radicals as needed. Use a comma to separate answers as needed.)

　Answer:　$-4 + \sqrt{23}, -4 - \sqrt{23}$

14.　Solve by completing the square.

$$6x^2 - 7x = 12$$

The solution is x = _____ .
(Use a comma to separate answers as needed. Type exact answers, using radicals as needed.)

　Answer:　$\dfrac{7 + \sqrt{337}}{12}, \dfrac{7 - \sqrt{337}}{12}$

15.　Solve by any method.

$$x^2 + 14x = -3$$

The solution(s) is(are) x = _____ .
(Simplify your answer. Type an exact answer, using radicals as needed. Use a comma to separate answers as needed.)

　Answer:　$-7 + \sqrt{46}, -7 - \sqrt{46}$

16.　Solve the following equation for t.

$$s = \frac{1}{7}gt^2$$

t = ± _____ . (Rationalize all denominators.)

　Answer:　$\dfrac{\sqrt{7sg}}{g}$

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17.   Solve for the specified variable.

     $m^2 + p^2 = c^2$ for m

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m = ± _____   (Type an exact answer, using radicals as needed.)

   Answer: $\sqrt{c^2 - p^2}$

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18.   Complete the following for the given equation.
     (a) Evaluate the discriminant.
     (b) How many real solutions are there?
     (c) Support your answer for part (b) graphically.
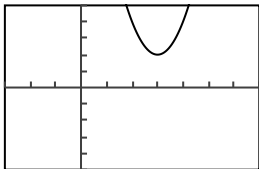
     $x^2 - 12x + 36 = 0$

(a) The discriminant is _____ .

(b) How many real solutions does this equation have?

   ○ **A.**   Two real solutions
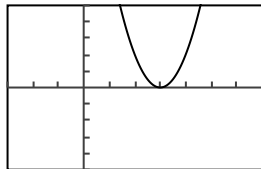   ○ **B.**   One real solution
   ○ **C.**   No real solutions

(c) Choose the correct graph below.

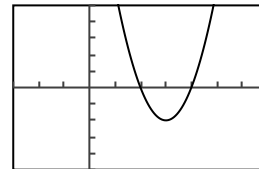   ○ **A.**   ○ **B.**   ○ **C.**
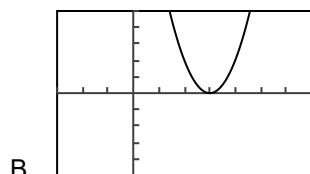

   Answers 0

     B. One real solution

     B.

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19. Use the quadratic formula to find any x-intercepts on the graph of the equation.

$$y = x^2 - 6x - 1$$

Type all x-intercepts below. Select the correct choice below and fill in any answer boxes within your choice.

○ **A.** x = _____
   (Simplify your answer. Type an exact answer, using radicals as needed. Use a comma to
   separate answers as needed.)

○ **B.** There is no x-intercept.

Answer: A. x = **$3 + \sqrt{10}, 3 - \sqrt{10}$**
   (Simplify your answer. Type an exact answer, using radicals as needed. Use a comma to separate answers as
   needed.)

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20. Use the quadratic formula to find any x-intercepts on the graph of the equation.

$$y = -2x^2 + 11x - 12$$

Type all x-intercepts below. Select the correct choice below and fill in any answer boxes within your choice.

○ **A.** x = _____
   (Simplify your answer. Type an exact answer, using radicals as needed. Use a comma to
   separate answers as needed.)

○ **B.** There is no x-intercept.

Answer: A. x = $\dfrac{3}{2}, 4$
   (Simplify your answer. Type an exact answer, using radicals as needed. Use a comma to separate answers as
   needed.)

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21. Solve the equation. Write complex solutions in standard form.

$$x^2 + 5x + 10 = 0$$

x = _____
(Use integers or fractions for any numbers in the expression. Type an exact answer, using radicals and i as needed. Type
your answer in the form a + bi. Use a comma to separate answers as needed.)

Answer: $-\dfrac{5}{2} + \dfrac{i\sqrt{15}}{2}, -\dfrac{5}{2} - \dfrac{i\sqrt{15}}{2}$

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22. Solve.

$$y^2 + 22 = 10y$$

The solution(s) is/are y = _____ .
(Simplify your answer. Type an exact answer, using radicals as needed. Use integers or fractions for any numbers in the expression. Express complex numbers in terms of i. Type each solution only once. Use a comma to separate answers as needed.)

Answer: $5 + \sqrt{3}, 5 - \sqrt{3}$

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23. Solve. Find all real solutions.

$$0 = x^4 - 6x^2 - 27 \qquad u = x^2$$

The solution(s) is(are) _____ . (Use a comma to separate answers as needed.)

Answer: $-3, 3$

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24. Solve. Find all real solutions.

$$x - 11\sqrt{x} + 28 = 0$$

x = _____
(Simplify your answer. Use a comma to separate answers as needed.)

Answer: 16, 49