Student: _____ **Instructor:** Stephanie Salling **Assignment:** Factoring Polynomials (Honors)
Date: _____ **Course:** Geometry (H) 2nd period

1. Solve the equation.

$(8x-5)(2x+6)=0$

$x =$ ☐
(Use a comma to separate answers as needed.)

*2. Factor out the GCF in the following polynomial.

$3y^8 + 6xy^9$

$3y^8 + 6xy^9 =$ ☐

*3. Factor the trinomial completely. If the trinomial contains a greatest common factor (other than 1), factor out the GCF first.

$x^2 - 3x - 10$

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

○ **A.** $x^2 - 3x - 10 =$ ☐ (Factor completely.)

○ **B.** $x^2 - 3x - 10$ is prime.

*4. Factor the trinomial completely.

$b^2 + 5b + 84$

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

○ **A.** $b^2 + 5b + 84 =$ ☐

○ **B.** $b^2 + 5b + 84$ is prime.

*5. Factor the polynomial completely.

$3x^2 - 18x + 27$

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

○ **A.** $3x^2 - 18x + 27 =$ ☐

○ **B.** $3x^2 - 18x + 27$ is prime.

*6. Factor the following polynomial.

$-8x^5y + 4xy^6$

$-8x^5y + 4xy^6 =$ ☐

*7. Factor the following polynomial by grouping.

$12xy - 9x - 4y + 3$

$12xy - 9x - 4y + 3 =$ ☐

Student: _____ **Instructor:** Stephanie Salling **Assignment:** Graphing Linear Equations
Date: _____ **Course:** Geometry 1st period

*1. Write an equation in standard form of the line satisfying the following condition.

The line goes through $(1, -2)$, and is vertical.

Choose the correct equation for the line.

- ○ $y = -2$
- ○ $x + 1 = -2$
- ○ $x + y = -1$
- ○ $x = 1$

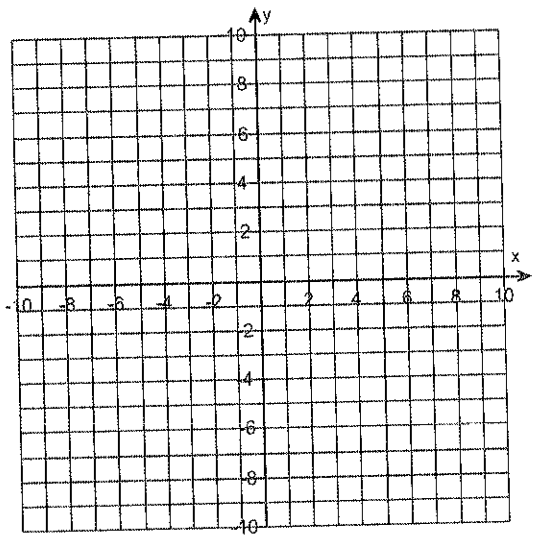
2. For the following equation, find three ordered pair solutions by completing the table. Then use the ordered pairs to graph the equation.

$y = 7x$

Find three ordered pair solutions of the given equation.

x	y
0	
−1	
1	

Use the graphing tool to graph the line.



*3. Find the slope and y-intercept of the line.

$2 + y = 0$

Find the slope. Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- ○ **A.** The slope of the line is ☐. (Simplify your answer. Type an integer or a fraction.)
- ○ **B.** The slope of the line is undefined.

Find the y-intercept. Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- ○ **A.** The y-intercept is ☐. (Simplify your answer. Type an ordered pair. Use integers or fractions for any numbers in the expression.)
- ○ **B.** There is no y-intercept.

*4. Find the slope and y-intercept of the line.

$3x - 3y = -9$

Find the slope. Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

○ **A.** The slope of the line is ☐. (Simplify your answer. Type an integer or a fraction.)

○ **B.** The slope of the line is undefined.

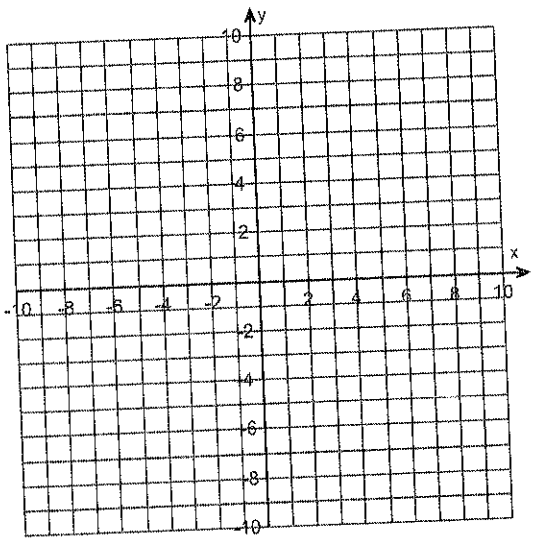
Find the y-intercept. Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

○ **A.** The y-intercept is ☐. (Simplify your answer. Type an ordered pair.)

○ **B.** There is no y-intercept.

*5. Use the slope-intercept form to graph the equation $y = 2x + 1$.

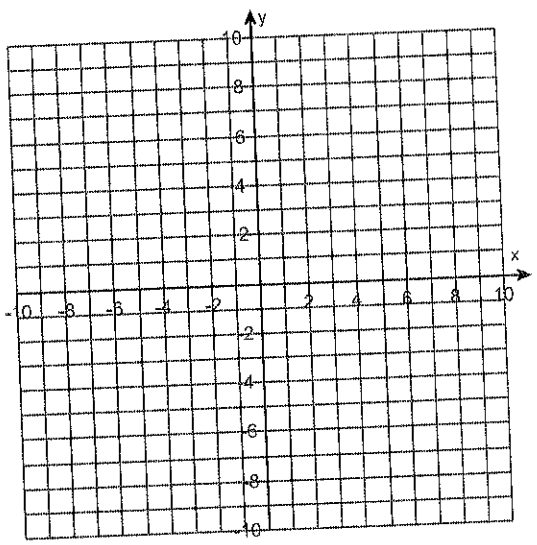
Use the graphing tool to graph the line. Use the slope and y-intercept when drawing the line.



6. Graph the linear equation.

$$y = \frac{1}{3}x - 1$$

Use the graphing tool to graph the linear equation.



Student: _____ **Instructor:** Stephanie Salling **Assignment:** Identify and evaluate algebraic expressions

Date: _____ **Course:** Geometry 1st period

1. Simplify the given expression and enter the answer in numerical terms.

$8[4+2(7-5)]$

$8[4+2(7-5)] =$ ☐

2. Simplify the expression.

$8 \cdot 6 - 2 \cdot 4$

$8 \cdot 6 - 2 \cdot 4 =$ ☐

*3. Find the value of ab when $a = \frac{8}{11}$ and $b = \frac{7}{9}$.

The answer is ☐. (Simplify your answer.)

4. Simplify the expression.

$$\frac{|3-2|+6}{3+4 \cdot 5}$$

$$\frac{|3-2|+6}{3+4 \cdot 5} = \square$$

5. Evaluate the given expression when $x = 18$ and $y = 7$.

$x^2 - 3y + x$

The answer is ☐.

6. Evaluate the following expression when $x = 4$ and $z = 5$.

$$\frac{z}{5x}$$

The answer is ☐. (Type an integer or a fraction. Simplify your answer.)

*7. Find $x + y$ when $x = 6$ and $y = 1$.

The answer is ☐.

*8. Find $2x$ when $x = 5$.

The answer is ☐.

9. Evaluate the following expression.

$$\left(\frac{2}{9}\right)^2$$

$\left(\frac{2}{9}\right)^2 =$ ☐ (Type an integer or a fraction. Simplify your answer.)

Student: _____ **Instructor:** Stephanie Salling **Assignment:** Laws of Exponents (Honors)
Date: _____ **Course:** Geometry (H) 2nd period

*1. Simplify the expression.

$$\frac{(y^3)^{-6}}{y^4}$$

$\frac{(y^3)^{-6}}{y^4} =$ ☐ (Use positive exponents only.)

*2. Simplify.

$$\frac{2^{-2}x^2y^{-4}}{5^{-2}x^7y^{-1}}$$

$\frac{2^{-2}x^2y^{-4}}{5^{-2}x^7y^{-1}} =$ ☐
(Type the ratio as a simplified fraction. Use positive exponents only.)

*3. Simplify.

$$(-xy^0x^3a^5)^{-3}$$

$(-xy^0x^3a^5)^{-3} =$ ☐ (Use positive exponents only.)

4. Simplify the expression. Assume that all bases are not equal to 0.

$$\left(\frac{4x^4}{8y^2}\right)^2$$

$\left(\frac{4x^4}{8y^2}\right)^2 =$ ☐

*5. Simplify the following. Assume that variables in the exponents represent integers and that all other variables are not 0.

$$\left(\frac{2x^{9t}}{x^{2t-1}}\right)^4$$

$\left(\frac{2x^{9t}}{x^{2t-1}}\right)^4 =$ ☐ (Simplify your answer.)

*6. Simplify. Write the answer using positive exponents only.

$$(5x^5y^7)^{-2}(3x^9y^6)$$

$(5x^5y^7)^{-2}(3x^9y^6) =$ ☐

Student: _____ **Instructor:** Stephanie Salling **Assignment:** Linear Inequalities
Date: _____ **Course:** Geometry 1st period

1. Solve the inequality.

$$\frac{1}{4}(x-8) < \frac{1}{15}(4x-1)$$

$\{x \mid \square\}$ (Type an inequality.)

*2. Solve.

$$5(x-3) < 2(3x-1)$$

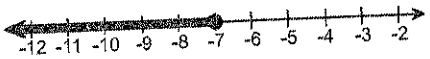
Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

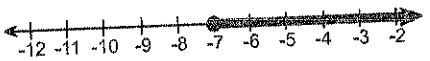
- ○ **A.** The solution is $\square$.
  (Type an inequality. Simplify your answer. Use integers or fractions for any numbers in the expression.)
- ○ **B.** The solution is all real numbers.
- ○ **C.** There is no solution.

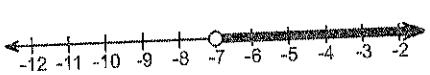
*3. Graph the solutions of the inequality.

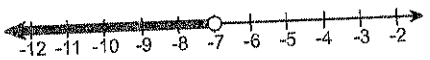
$$-7 \leq x$$

Choose the correct graph below.

○ **A.**


○ **B.**


○ **C.**


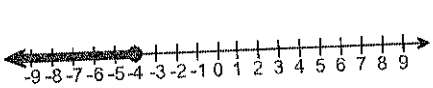
○ **D.**


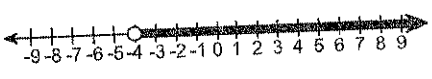
4. Solve the inequality. Graph the solution set.

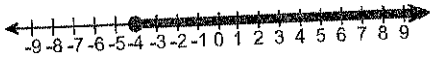
$$x - 3 \geq -7$$

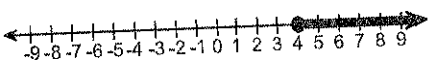
The solution set is $\{x \mid \square\}$.
(Type an inequality. Use integers or fractions for any numbers in the expression.)

Choose the correct graph below.

○ **A.**


○ **B.**


○ **C.**


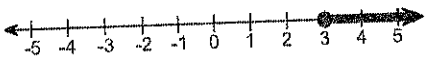
○ **D.**


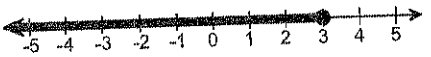
*5. Solve. Graph the solutions.

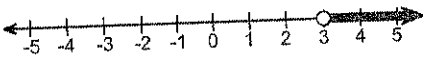
$4x - 7 \leq 3x - 4$

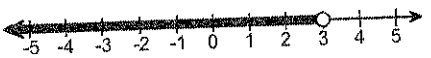
The solution is [ ].
(Simplify your answer. Type an inequality. Use integers or fractions for any numbers in the expression.)

Choose the correct graph below.

○ A. 

○ B. 

○ C. 

○ D. 

6. Solve the inequality.

$8(x+1) - 7x \geq -6$

The solution set is $\{x \mid$ [ ] $\}$.

*7. Solve.

$4(x-6) + 4x - 6 \leq 6(x-7) + 4x$

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

○ A. The solution is [ ].
(Type an inequality. Simplify your answer. Use integers or fractions for any numbers in the expression.)

○ B. The solution is all real numbers.

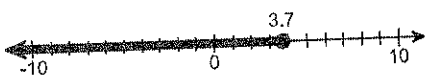
○ C. There is no solution.

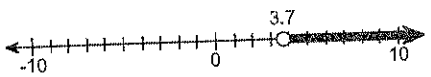
*8. Solve. Graph the solutions.

$2x > -7.4$

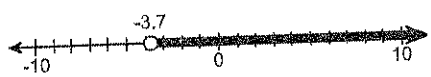
The solution is [ ].
(Simplify your answer. Type an inequality. Use integers or decimals for any numbers in the expression.)

Choose the correct graph below.

○ A. 

○ B. 

○ C. 

○ D. 

Student: _____ **Instructor:** Stephanie Salling **Assignment:** Polynomials (Honors)
Date: _____ **Course:** Geometry (H) 2nd period

1. Multiply using the FOIL method.

$(y-3)(2y-8)$

$(y-3)(2y-8) =$ ☐

*2. Perform the indicated operation.

Subtract $(-4x^2-10x)$ from (x^2-8x).

The difference between the two polynomials is ☐.
(Simplify your answer. Do not factor.)

3. Multiply.

$(6x+5)^2$

$(6x+5)^2 =$ ☐ (Simplify your answer.)

*4. Find the degree of the term.

$-7xy^2$

The degree of $-7xy^2$ is ☐.

*5. Find the degree of the polynomial and indicate whether the polynomial is a monomial, binomial, trinomial, or none of these.

$x^2y-6xy^2+5x+y^6$

The degree of the polynomial is ☐.

Is $x^2y-6xy^2+5x+y^6$ a monomial, binomial, trinomial, or none of these?

- ○ **A.** Monomial
- ○ **B.** Binomial
- ○ **C.** Trinomial
- ○ **D.** None of these

*6. Multiply.

$(3x+1)(3x+6)$

$(3x+1)(3x+6) =$ ☐ (Simplify your answer.)

*7. Multiply.

$(p-3)^4$

$(p-3)^4 =$ ☐
(Simplify your answer.)

Student: _____ Date: _____	Instructor: Stephanie Salling Course: Geometry (H) 2nd period	Assignment: Radical Expressions (Honors)

*1. Add or subtract.

$5\sqrt{4}-2+\sqrt{2}$

$5\sqrt{4}-2+\sqrt{2}=$ ☐

(Type an exact answer, using radicals as needed. Simplify your answer.)

*2. Multiply.

$(9\sqrt{6}-3\sqrt{7})(\sqrt{6}-9\sqrt{7})$

$(9\sqrt{6}-3\sqrt{7})(\sqrt{6}-9\sqrt{7})=$ ☐

(Type an exact answer, using radicals as needed. Simplify your answer.)

*3. Rationalize the denominator.

$\frac{\sqrt{5}}{\sqrt{2}}$

The answer is ☐.

4. Find the square root.

$-\sqrt{169}$

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

○ **A.** $-\sqrt{169}=$ ☐

○ **B.** The root is not a real number.

*5. Add or subtract.

$6\sqrt{48}-2\sqrt{32}+\sqrt{75}$

$6\sqrt{48}-2\sqrt{32}+\sqrt{75}=$ ☐

(Simplify your answer. Type an exact answer, using radicals as needed.)

*6. Multiply, and then simplify if possible.

$(\sqrt{7}-\sqrt{2})^2$

$(\sqrt{7}-\sqrt{2})^2=$ ☐

(Simplify your answer. Do not factor. Type an exact answer, using radicals as needed.)

*7. Rationalize the denominator of $\sqrt[4]{\frac{16}{125}}$.

$\sqrt[4]{\frac{16}{125}}=$ ☐

Student: _____ **Instructor:** Stephanie Salling **Assignment:** Rational Expressions (Honors)
Date: _____ **Course:** Geometry (H) 2nd period

*1. Perform the multiplication.

$$\frac{8x^4+3x^2-5}{x-1}\cdot\frac{x+1}{x^4-1}$$

$$\frac{8x^4+3x^2-5}{x-1}\cdot\frac{x+1}{x^4-1}=$$ ☐ (Simplify your answer.)

*2. Find the domain of the rational function.

$$f(x)=\frac{3}{6-x}$$

The domain of f(x) is $\{x \mid x \text{ is a real number and } x \neq$ ☐ $\}$.
(Use a comma to separate answers as needed.)

*3. Simplify the rational expression.

$$\frac{16x^2-12x+9}{64x^3+27}$$

$$\frac{16x^2-12x+9}{64x^3+27}=$$ ☐

*4. Simplify the rational expression.

$$\frac{x^2-9}{3-x}$$

$$\frac{x^2-9}{3-x}=$$ ☐ (Simplify your asnswer.)

*5. Multiply and simplify.

$$\frac{18x-12}{49}\cdot\frac{14}{2-3x}$$

$$\frac{18x-12}{49}\cdot\frac{14}{2-3x}=$$ ☐
(Type an integer or a fraction. Simplify your answer.)

6. Multiply using the FOIL method.

$$(y-4)(5y-8)$$

$(y-4)(5y-8)=$ ☐

*7. Multiply and simplify.

$$\frac{x^2-8x-9}{2x^2-162}\cdot\frac{x^2+18x+81}{2x^2+20x+18}$$

$$\frac{x^2-8x-9}{2x^2-162}\cdot\frac{x^2+18x+81}{2x^2+20x+18}=$$ ☐

Student: _____ **Date:** _____	**Instructor:** Stephanie Salling **Course:** Geometry (H) 2nd period	**Assignment:** Real Numbers and Order of Operations (Honors)

*1. Simplify the expression.

$$\frac{0.3-(-1.3)}{-0.4}$$

$$\frac{0.3-(-1.3)}{-0.4} = \square$$

2. Simplify the expression.

$$\frac{|7-1|+3}{10+3\cdot 4}$$

$$\frac{|7-1|+3}{10+3\cdot 4} = \square$$

3. Simplify the given expression and enter the answer in numerical terms.

$$4[6+3(8-4)]$$

$4[6+3(8-4)] =$ ☐

*4. Simplify.

$$3\{-2+5[4-3(-2+3)]\}$$

$3\{-2+5[4-3(-2+3)]\} =$ ☐

*5. List the irrational numbers in the set $\left\{\frac{4}{3}, -7, 8, 2.\overline{51}, 4.73773777..., \frac{0}{7}, \pi, \frac{12}{3}, -\frac{6}{7}, \sqrt{3}\right\}$.

Select all that apply.

- ☐ **A.** π
- ☐ **B.** 8
- ☐ **C.** -7
- ☐ **D.** 4.73773777...
- ☐ **E.** $2.\overline{51}$
- ☐ **F.** $\sqrt{3}$
- ☐ **G.** $\frac{4}{3}$
- ☐ **H.** $\frac{12}{3}$
- ☐ **I.** $-\frac{6}{7}$
- ☐ **J.** $\frac{0}{7}$

*6. Simplify the expression.

$$\frac{\frac{1}{2}\cdot 4-6}{8+\frac{1}{3}\cdot 9}$$

$$\frac{\frac{1}{2}\cdot 4-6}{8+\frac{1}{3}\cdot 9} = \square$$

Student: _____ **Instructor:** Stephanie Salling **Assignment:** Simplify algebraic expressions
Date: _____ **Course:** Geometry 1st period

*1. Simplify the expression.

$-(11-t)+(3t-8)$

$-(11-t)+(3t-8)=$ ☐

*2. Simplify the following expression.

$(13-18y)-(20+2y)$

$(13-18y)-(20+2y)=$ ☐

*3. Simplify the expression.

$8n+3(3n-4)-2$

$8n+3(3n-4)-2=$ ☐

*4. Simplify the expression.

$2(3y+8)$

$2(3y+8)=$ ☐

5. Remove the parentheses and simplify the expression.

$2(4r+6)-15$

$2(4r+6)-15=$ ☐

*6. Simplify the following expression.

$8y-14+6y-17y$

$8y-14+6y-17y=$ ☐

*7. Simplify by combining like terms.

$6x^2-6xy-5y^2+8x^2-xy+2y^2$

$6x^2-6xy-5y^2+8x^2-xy+2y^2=$ ☐
(Simplify your answer. Do not factor.)

8. Simplify the expression by combining like terms.

$2y+5y$

$2y+5y=$ ☐

*9. Simplify the following expression.

$\frac{2}{9}a-\frac{7}{9}-\frac{1}{2}a+\frac{1}{2}$

$\frac{2}{9}a-\frac{7}{9}-\frac{1}{2}a+\frac{1}{2}=$ ☐
(Type terms as simplified fractions. Do not use decimals.)

Student: _____ **Instructor:** Stephanie Salling **Assignment:** Solve Formulas for a Variable
Date: _____ **Course:** Geometry 1st period

*1. Solve for f.

$B = 8\pi f$

$f =$ ☐
(Simplify your answer. Type an exact answer, using π as needed.)

2. Substitute the given values into the formula, and solve for the unknown variable.

$A = \frac{1}{2}h(B + b)$; $A = 72$, $B = 6$, $b = 3$

$h =$ ☐

*3. Solve the equation for the specified variable.

$U = Y(b + R)$, for b

$b =$ ☐

*4. Solve $9x - 4y = 17$ for y.

$y =$ ☐ (Use integers or fractions for any numbers in the expression.)

*5. Solve $M = 7pt^3 - 3pz$ for z.

$z =$ ☐
(Use integers or fractions for any numbers in the expression)

*6. Solve $K = PRT$ for P.

$P =$ ☐

*7. Solve the equation for the specified variable.

$s = gr - 3gk^4$, for g

$g =$ ☐

8. Solve $x - 4y = 13$ for y.

$y =$ ☐ (Use integers or fractions for any numbers in the expression.)

*9. The day's high temperature in Detroit, Michigan was recorded as 41°F. Use the formula $C = \frac{5}{9}(F - 32)$ to write 41°F as degrees Celsius.

The day's high temperature written as degrees Celsius is ☐ °C.

10. Solve the equation $P = n + k + m$ for n.

$n =$ ☐ (Simplify your answer.)

Student: _____ **Instructor:** Stephanie Salling **Assignment:** Solve Linear Equations
Date: _____ **Course:** Geometry 1st period

*1. Solve the equation and check.

$$\frac{1}{2}(y+2)+2=\frac{1}{4}(8y-60)-3$$

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

- A. $y=$ ☐ (Type an integer or a simplified fraction.)
- B. The solution is all real numbers.
- C. There is no solution.

2. Solve the equation for x.

$$2(x-4)-7=5x-3(4+x)$$

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

- A. $x=$ ☐ (Type an integer or a simplified fraction.)
- B. The solution is all real numbers.
- C. There is no solution.

*3. Solve the equation.

$$2(x+3)+9=2x+8$$

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

- A. $x=$ ☐ (Simplify your answer.)
- B. The solution is all real numbers.
- C. There is no solution.

*4. Solve the given equation for the variable x.

$$\frac{x}{2}+\frac{2}{5}=\frac{5}{6}$$

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

- A. $x=$ ☐
- B. The solution is all real numbers.
- C. There is no solution.

5. Solve.

$$5x-3=3(x+1)+2x-6$$

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

- A. $x=$ ☐ (Simplify your answer.)
- B. The solution is all real numbers.
- C. There is no solution.

Student: _____ **Instructor:** Stephanie Salling **Assignment:** Solve Quadratic Equations (Honors)
Date: _____ **Course:** Geometry (H) 2nd period

1. Use the square root property to solve the quadratic equation.

$x^2 = 31$

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

○ **A.** $x =$ ☐
(Simplify your answer. Rationalize all denominators. Use a comma to separate answers as needed.

○ **B.** There is no solution.

2. Solve using the quadratic formula.

$3x^2 = 16x + 12$

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

○ **A.** $x =$ ☐
(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.)

○ **B.** The solution is not a real number.

3. Use the square root property to solve the quadratic equation.

$x^2 - 11 = 0$

Select the correct choice below and, if necessary, fill in the answer box 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 real solution.

4. Solve the equation.

$x^2 - 5x = 0$

$x =$ ☐
(Use a comma to separate answers as needed.)

5. Use the square root property to solve the quadratic equation.

$x^2 = \frac{1}{9}$

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

○ **A.** $x =$ ☐
(Type an integer or a fraction. Use a comma to separate answers as needed.)

○ **B.** The solution is not a real number.