

Entering Algebra 2

Student: _____
Date: _____

Assignment: Exponents

1. Evaluate the expression with the given replacement value.

$$\frac{5z^2}{7} \text{ when } z = -2$$

$$\frac{5z^2}{7} = \boxed{} \text{ (Type an integer or a fraction.)}$$

2. Use the power rule and the power of a product rule to simplify the expression.

$$(y^5 z^6)^8$$

$$(y^5 z^6)^8 = \boxed{}$$

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

$$\left(\frac{3x^3}{9y^6}\right)^4$$

$$\left(\frac{3x^3}{9y^6}\right)^4 = \boxed{}$$

4. Use the power rule and the power of a product or quotient rule to simplify the expression.

$$(pq)^5$$

$$(pq)^5 = \boxed{} \text{ (Type your answer using exponential notation.)}$$

5. Use the product rule to simplify the expression.

$$(-8z^4)(5z^4)$$

$$(-8z^4)(5z^4) = \boxed{}$$

6. Evaluate the expression.

$$(-2)^4$$

$$(-2)^4 = \boxed{}$$

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

$$-7n^0$$

$$-7n^0 = \boxed{}$$

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Entering Algebra 2

Student: _____
Date: _____

Assignment: Factor Polynomials

- *1. Factor the following binomial completely.

$$9x^2 - 25$$

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

- A. $9x^2 - 25 = \boxed{}$ (Factor completely.)
 B. The polynomial is prime.

- *2. Factor the trinomial completely.

$$4x^2 + 32x + 60$$

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

- A. $4x^2 + 32x + 60 = \boxed{}$
 (Factor completely.)
 B. The polynomial is prime.

- *3. Factor the trinomial completely.

$$x^2 - 3x + 2$$

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

- A. $x^2 - 3x + 2 = \boxed{}$ (Type your answer in factored form.)
 B. The polynomial is prime.

- *4. Factor a negative number or a GCF with a negative coefficient from the polynomial.

$$-2x - 6$$

$$-2x - 6 = \boxed{} \text{ (Factor completely.)}$$

- *5. Factor the trinomial completely.

$$x^2 + 7x - 18$$

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

- A. $x^2 + 7x - 18 = \boxed{}$
 B. The polynomial is prime.

6. Solve the equation.

$$(5x - 3)(2x + 7) = 0$$

$$x = \boxed{}$$

(Use a comma to separate answers as needed.)

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Entering Algebra 2

Student: _____
Date: _____

Assignment: Graphing Linear Equations

*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.

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

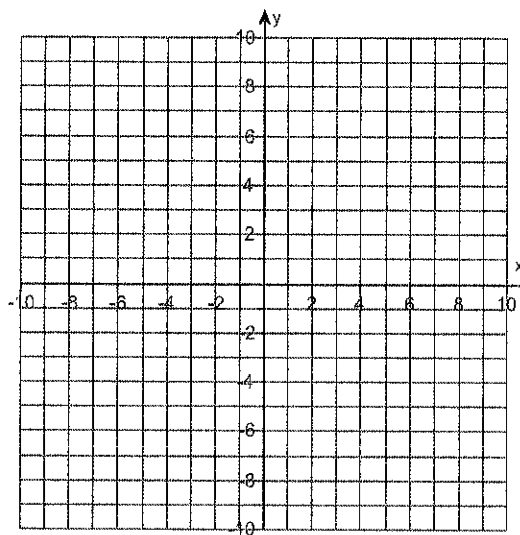
2. For the following equation, find three ordered pair solutions by completing the table. Then use the ordered pairs to graph the equation.

$y = 7x$

Find three ordered pair solutions of the given equation.

x	y
0	<input style="width: 80px; height: 20px;" type="text"/>
-1	<input style="width: 80px; height: 20px;" type="text"/>
1	<input style="width: 80px; height: 20px;" type="text"/>

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.

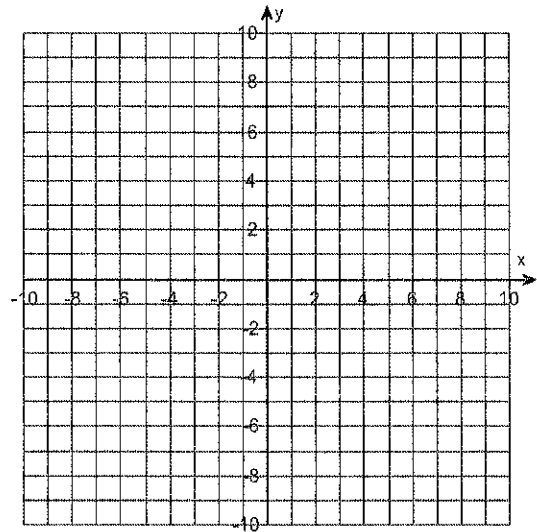
Find the y-intercept. Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

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 $y = 2x + 1$.

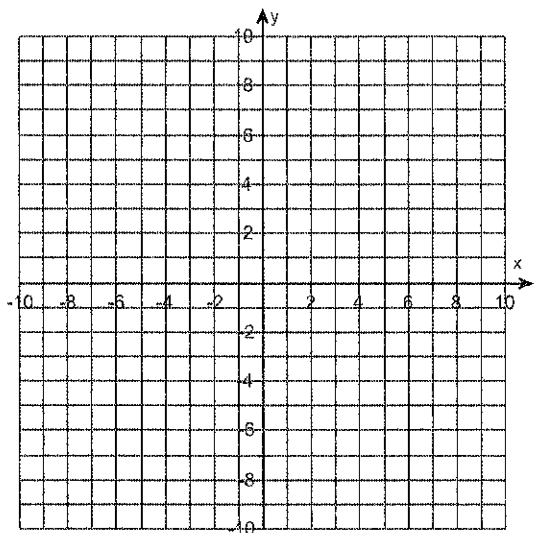
Use the graphing tool to graph the line. Use the slope and y-intercept when drawing the line.



6. Graph the linear equation.

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

Use the graphing tool to graph the linear equation.



Entering Algebra 2

Student: _____
Date: _____

Assignment: Identify and evaluate algebraic expressions

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

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

$$8[4 + 2(7 - 5)] = \boxed{}$$

2. Simplify the expression.

$$8 \cdot 6 - 2 \cdot 4$$

$$8 \cdot 6 - 2 \cdot 4 = \boxed{}$$

- *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.

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

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

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.

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

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

Entering Algebra 2

Student: _____
Date: _____

Assignment: Linear Inequalities

1. Solve the inequality.

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

{x | _____} (Type an inequality.)

*2. Solve.

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


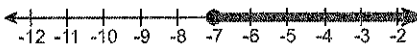
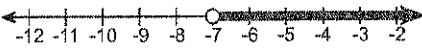
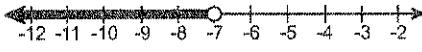
Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. The solution is _____.
(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. 

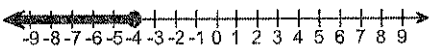
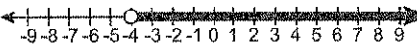
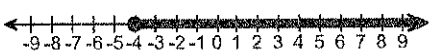
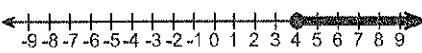
4. Solve the inequality. Graph the solution set.

$$x-3 \geq -7$$

The solution set is {x | _____}.

(Type an inequality. Use integers or fractions for any numbers in the expression.)

Choose the correct graph below.

- A.  B. 
- C.  D. 

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Entering Algebra 2

Student: _____
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Assignment: Multiply Polynomials

1. Multiply using the FOIL method.

$$(y - 5)(2y - 8)$$

$$(y - 5)(2y - 8) = \boxed{}$$

2. Multiply.

$$(10x + y)(10x - y)$$

$$(10x + y)(10x - y) = \boxed{}$$

- *3. Multiply using the rule for the product of the sum and difference of two terms.

$$(7x + 4)(7x - 4)$$

$$(7x + 4)(7x - 4) = \boxed{}$$

- *4. Multiply

$$(x^2 + 4y)(x^2 - 4y)$$

$$(x^2 + 4y)(x^2 - 4y) = \boxed{} \text{ (Simplify your answer.)}$$

- *5. Multiply, using special product methods.

$$[(-2s - 3) + 4][(-2s - 3) - 4]$$

$$[(-2s - 3) + 4][(-2s - 3) - 4] = \boxed{} \text{ (Combine like terms.)}$$

6. Multiply.

$$(7a - 6)(3a^2 - 2a - 5)$$

$$(7a - 6)(3a^2 - 2a - 5) = \boxed{} \text{ (Simplify your answer.)}$$

7. Multiply.

$$\left(\frac{7}{8}a^2 - 7\right)\left(\frac{7}{8}a^2 + 7\right)$$

$$\left(\frac{7}{8}a^2 - 7\right)\left(\frac{7}{8}a^2 + 7\right) = \boxed{}$$

(Simplify your answer. Use integers or fractions for any numbers in the expression.)

- *8. Multiply.

$$-3xy(9x + y)$$

$$-3xy(9x + y) = \boxed{} \text{ (Simplify your answer.)}$$

9. Use FOIL to multiply.

$$(y + 2)(y + 5)$$

$$(y + 2)(y + 5) = \boxed{} \text{ (Simplify your answer.)}$$

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Entering Algebra 2

Student: _____

Assignment: Order of Operations

Date: _____

*1. Simplify.

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

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

2. Evaluate.

$$3^3$$

$$3^3 = \boxed{} \text{ (Simplify your answer.)}$$

3. Simplify the expression.

$$7 + 2[10(4 \cdot 5 - 16) - 30]$$

$$7 + 2[10(4 \cdot 5 - 16) - 30] = \boxed{}$$

*4. Simplify the expression.

$$-2^2 + 3^3$$

$$-2^2 + 3^3 = \boxed{}$$

*5. Find the value of the expression when $x_1 = 3$, $x_2 = 5$, $y_1 = -4$, $y_2 = 3$.

$$\frac{y_2 - y_1}{x_2 - x_1}$$

$$\frac{y_2 - y_1}{x_2 - x_1} = \boxed{}$$

*6. Simplify the expression.

$$\left(\sqrt[3]{27}\right)(-9) - \left(\sqrt{64}\right)(-3)$$

$$\left(\sqrt[3]{27}\right)(-9) - \left(\sqrt{64}\right)(-3) = \boxed{}$$

*7. Simplify the expression.

$$(-5)^2 + 4^3$$

$$(-5)^2 + 4^3 = \boxed{}$$

8. Simplify the given expression and enter in numerical form.

$$3 + 2 \cdot 8$$

$$3 + 2 \cdot 8 = \boxed{}$$

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Entering Algebra 2

Student: _____
Date: _____

Assignment: Simplify algebraic expressions

- *1. Simplify the expression.

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

$$-(11-t) + (3t-8) = \boxed{}$$

- *2. Simplify the following expression.

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

$$(13-18y) - (20+2y) = \boxed{}$$

- *3. Simplify the expression.

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

$$8n + 3(3n-4) - 2 = \boxed{}$$

- *4. Simplify the expression.

$$2(3y+8)$$

$$2(3y+8) = \boxed{}$$

5. Remove the parentheses and simplify the expression.

$$2(4r+6) - 15$$

$$2(4r+6) - 15 = \boxed{}$$

- *6. Simplify the following expression.

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

$$8y - 14 + 6y - 17y = \boxed{}$$

- *7. Simplify by combining like terms.

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

$$6x^2 - 6xy - 5y^2 + 8x^2 - xy + 2y^2 = \boxed{}$$

(Simplify your answer. Do not factor.)

8. Simplify the expression by combining like terms.

$$2y + 5y$$

$$2y + 5y = \boxed{}$$

- *9. Simplify the following expression.

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

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

(Type terms as simplified fractions. Do not use decimals.)

Entering Algebra 2

Student: _____
Date: _____

Assignment: Simplify Radical Expressions

- *1. Simplify. Assume that all variables represent positive real numbers.

$$\sqrt[3]{50x^{14}}$$

$$\sqrt[3]{50x^{14}} = \boxed{}$$

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

- *2. Simplify by factoring.

$$\sqrt{54}$$

$$\sqrt{54} = \boxed{}$$

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

- *3. Simplify. Assume that all variables represent positive real numbers.

$$\sqrt{49x^2}$$

$$\sqrt{49x^2} = \boxed{}$$

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

4. Use the product rule to simplify the radical.

$$\sqrt{150}$$

$$\sqrt{150} = \boxed{}$$

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

5. Find the square root.

$$\sqrt{169}$$

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

A. $\sqrt{169} = \boxed{}$

B. The root is not a real number.

6. Use the quotient rule and the product rule to simplify the radical.

$$\sqrt{\frac{175}{144}}$$

$$\sqrt{\frac{175}{144}} = \boxed{}$$

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

- *7. Simplify. Assume that all variables represent positive real numbers.

$$\sqrt[3]{x^6 y^5}$$

$$\sqrt[3]{x^6 y^5} = \boxed{}$$

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

Entering Algebra 2

Student: _____
Date: _____

Assignment: Solve Formulas for a Variable

*1. Solve for f.

$$B = 8\pi f$$

$$f = \boxed{}$$

(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.

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

$$h = \boxed{}$$

*3. Solve the equation for the specified variable.

$$U = Y(b + R), \text{ for } b$$

$$b = \boxed{}$$

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

$$y = \boxed{} \text{ (Use integers or fractions for any numbers in the expression.)}$$

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

$$z = \boxed{}$$

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

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

$$P = \boxed{}$$

*7. Solve the equation for the specified variable.

$$s = gr - 3gk^4, \text{ for } g$$

$$g = \boxed{}$$

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

$$y = \boxed{} \text{ (Use integers or fractions for any numbers in the expression.)}$$

*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 $\boxed{}^\circ\text{C}$.

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

$$n = \boxed{} \text{ (Simplify your answer.)}$$

Entering Algebra 2

Student: _____
Date: _____

Assignment: Solve Linear Equations

*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.

Entering Algebra 2

Student: _____

Date: _____

Assignment: Solve Quadratic Equations

*1. Solve.

$$-6x^2 + 96 = 0$$

x =

(Simplify your answer. Type each solution only once. Use a comma to separate answers as needed.)

2. Use the quadratic formula to solve the equation.

$$2k^2 + 8k - 8 = 0$$

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

A. k =

(Type an exact answer, using radicals as needed. Use a comma to separate answers as needed.)

B. The solution is not a real number.

3. Use the quadratic formula to solve the quadratic equation.

$$3z^2 - 2z = \frac{4}{3}$$

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

A. z =

(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.

4. Solve the equation.

$$(7x - 6)(9x + 6) = 0$$

x =

(Use a comma to separate answers as needed.)

*5. Solve the equation.

$$4x^2 - 1 = 0$$

x =

(Simplify your answer. Type each solution only once. Use a comma to separate answers as needed.)

*6. Solve the equation.

$$x^2 - 6x = 40$$

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

A. The solution is x = .

(Simplify your answer. Type each solution only once. Use a comma to separate answers as needed.)

B. There is no solution.

Entering Algebra 2

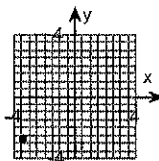
Student: _____
Date: _____

Assignment: The Coordinate Plane

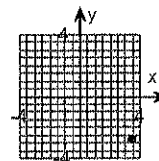
1. Plot the ordered pair $(3.4, 2.8)$. State in which quadrant or on which axis the point lies.

Choose the correct graph below.

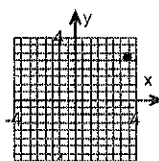
A.



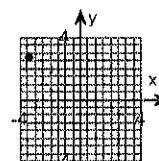
B.



C.



D.



In which quadrant, or on which axis, does the point lie?

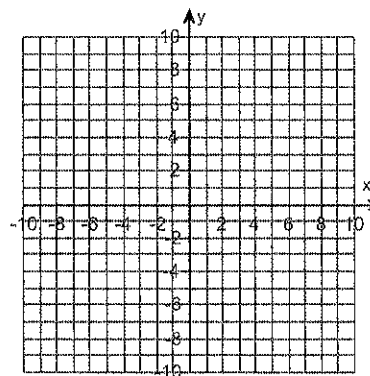
- on the x-axis
- I
- on the y-axis
- II

2. Plot the ordered pair $(4, 1)$. State in which quadrant or on which axis the point lies.

Plot the ordered pair on the graph to the right.

In which quadrant, or on which axis, does the point lie?

- I
- IV
- on the x-axis
- III
- on the y-axis
- II



*3. Find the slope of the line containing the given pair of points. If the slope is undefined, state this.

$(-7, 8)$ and $(0, 2)$

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

- A. The slope is . (Type an integer or a simplified fraction.)
- B. The slope is undefined.