

Student: ~~Day, Myers~~

Date: 3/6/16

Time: 4:14 PM

Instructor: ~~Teah Support, Dee Wessler,~~

~~Nathalie Dodson, Christina Horton~~

Course: MAT1302-14A-4B16-S1

Book: Bittinger: Elementary Algebra,
Concepts and Applications, 9e

Assignment: Unit VIII Homework

1. Evaluate.

$$\frac{m+n}{10} \text{ for } m = 39 \text{ and } n = 11$$

$$\frac{m+n}{10} = \square$$

(Simplify your answer.)

2. Multiply.

$$4(u + 8 + 9v)$$

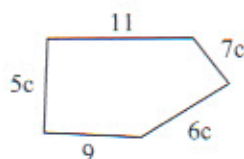
$$4(u + 8 + 9v) = \square$$

3. Find the absolute value.

$$|x| \text{ for } x = -24$$

$$|x| = \square$$

4. Find the perimeter for the figure shown in the diagram below.



The perimeter is $\square$.

5. Travis had \$278.97 in his checking account. After depositing \$142 in the account and writing a check, his account was overdrawn by \$40.64. What was the amount of the check?

The amount of the check was \$ $\square$. (Type an integer or a decimal.)

6. Perform the necessary operations.

$$-4 - 7 + (-8) - 9$$

$$-4 - 7 + (-8) - 9 = \square$$

Student: ~~Emily Myers~~

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7. Simplify.

$$\frac{3^2 - (-1)^7}{5 \cdot 3 - 4 \cdot 2^2 - 2^2}$$

$$\frac{3^2 - (-1)^7}{5 \cdot 3 - 4 \cdot 2^2 - 2^2} = \boxed{} \text{ (Type an integer or a simplified fraction.)}$$

8. Simplify.

$$5(8m - 4) - [2(5m - 3) + 1]$$

$$5(8m - 4) - [2(5m - 3) + 1] = \boxed{}$$

(Simplify your answer.)

9. Solve using the addition principle.

$$x - \frac{1}{12} = -\frac{5}{6}$$

The solution is $x = \boxed{}$.

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

10. Solve and check.

$$\frac{4}{5}t - 6 = 2$$

The solution is $t = \boxed{}$.

(Type an integer or a simplified fraction.)

11. Solve. Label any contradictions or identities.

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

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

- ☐ A. $x = \boxed{}$ (Simplify your answer.)
- ☐ B. All real numbers are solutions; identity.
- ☐ C. No solution; contradiction.

Student: ~~Erin Myers~~

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12. Solve for m.

$$f = \frac{1}{2}mp$$

The solution is $m = \square$.

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

13. Jerry left a \$4.20 tip on a meal that cost \$42. What percent of the meal's cost was the tip? What was the total cost of the meal including the tip?

The tip was $\square\%$ of the meal's cost.

The total cost of the meal including the tip was \$ $\square$.

14. The ages of Edna, Ellie, and Elsa are consecutive integers. The sum of their ages is 126.

What are their ages?

Their ages are $\square$ years, $\square$ years and $\square$ years old.

(Type the ages in order from youngest to oldest.)

15. In a triangle, the measure of the first angle is three times the measure of the second angle. The measure of the third angle is 70° more than the measure of the second angle. Use the fact that the sum of the measures of the three angles of a triangle is 180° to find the measure of each angle.

The measure of the first angle is $\square^\circ$.

The measure of the second angle is $\square^\circ$.

The measure of the third angle is $\square^\circ$.

16. Solve using the addition and multiplication principles.

$$2(r - 6) + 1 > 3(r + 2) - 16$$

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

☐ A. The solution set is $\{r \mid r > \square\}$. (Simplify your answer.)

☐ B. The solution set is $\{r \mid r < \square\}$. (Simplify your answer.)

☐ C. The solution set is $\{r \mid r \geq \square\}$. (Simplify your answer.)

☐ D. The solution set is $\{r \mid r \leq \square\}$. (Simplify your answer.)

17. A car rents for \$40 per day plus 22¢ per mile. You are on a daily budget of \$84. What mileage will allow you to stay within your budget?

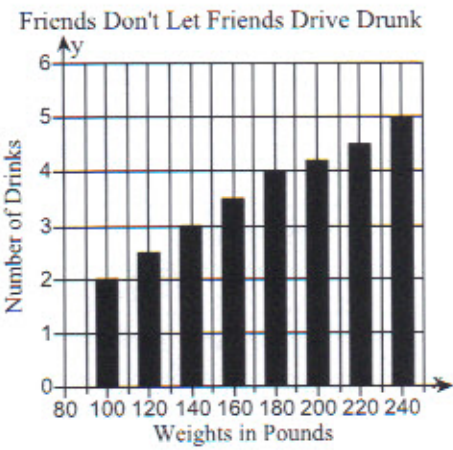
The solution is $\{m \mid m \leq \square \text{ miles}\}$.

18. A blood-alcohol level of 0.08% or higher makes driving illegal in the United States. The bar graph shows how many drinks a person of a certain weight would need to consume in 1 hr to achieve a blood-alcohol level of 0.08%. Note that a 12-oz beer, a 5-oz glass of wine, or a cocktail containing $1\frac{1}{2}$ oz of distilled liquor all count as one drink. What can you conclude about the weight of someone who has consumed 2 drinks in 1 hr without reaching a blood-alcohol level of 0.08%?

The person weighs

greater than
less than or equal to
greater than or equal to
less than

 lbs.



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19.

Show that each pair is a solution of the equation.
Then graph the two pairs to determine another
solution.

$$y + 2x = 4; (3, -2), (5, -6)$$

Is the pair $(3, -2)$ a solution?

☐

No

☐

Yes

Is the pair $(5, -6)$ a solution?

☐

No

☐

Yes

Use the graphing tool to graph the equation.



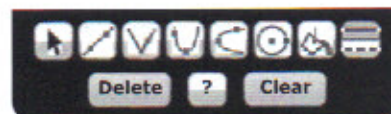
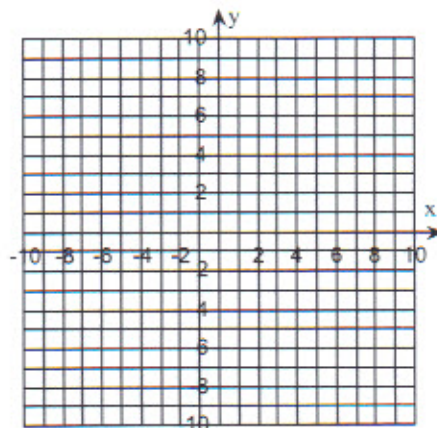
Use the graph to determine another solution of
 $y + 2x = 4$. Is the pair $(-1, 6)$ a solution?

☐

No

☐

Yes

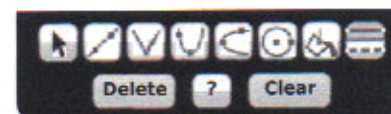
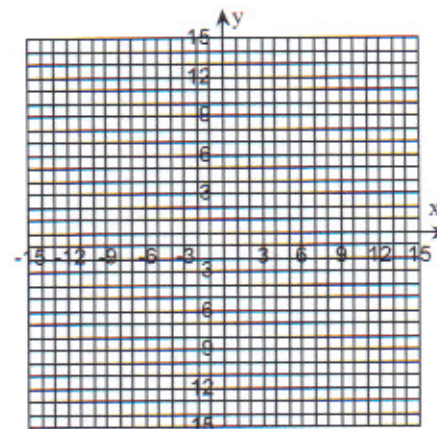


20.

Graph the equation.

$$y = -\frac{1}{4}x$$

Use the graphing tool to graph the equation.



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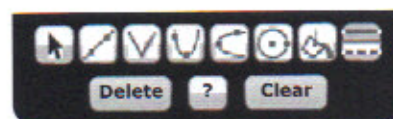
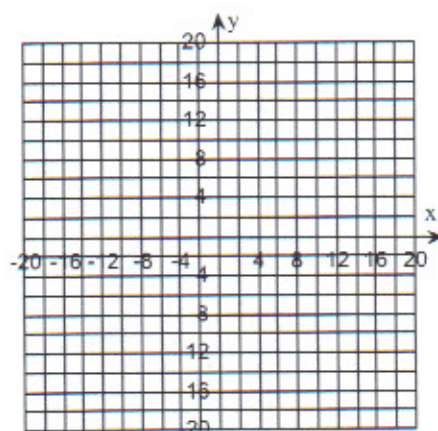
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21. Use the intercepts to graph the equation.

$$9x - 5y = 45$$

Use the graphing tool to graph the line. Use the intercepts when drawing the line. If only one intercept exists, use it and another point to draw the line.



22. On May 8, Cliff rented a car with a full tank of gas and 13,932 mi on the odometer. On May 12, he returned the car with 14,268 mi on the odometer. The rental agency charged Cliff \$276 and needed 14 gal of gas to fill up the tank. Assume that the pickup time was later in the day than the return time so that no late fees were applied.

The car traveled miles per gallon of gas consumed.

The agency charged Cliff \$ per day for the car.

Cliff drove miles per day.

23. Find the slope, if it exists, of the line containing the points $(2, -6)$ and $(2, -7)$.

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

☐ A. $m = \text{$ (Type an integer or a simplified fraction.)

☐ B. The slope is undefined.

24. Find the slope-intercept equation of the line that has the given characteristics.

Slope $-\frac{15}{11}$ and y-intercept $(0, -9)$

The slope-intercept equation is .

(Type an equation. Type your answer in slope-intercept form. Use integers or fractions for any numbers in the equation. Simplify your answer.)

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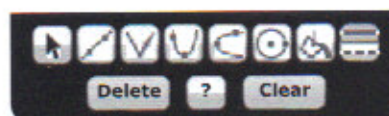
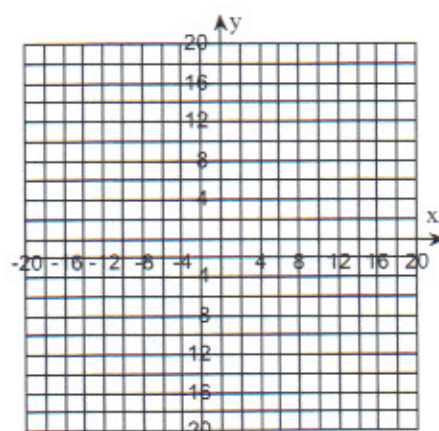
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25. Graph the equation using the slope and the y-intercept.

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

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



26. Determine if the graphs of the given equations are parallel.

$$y = 2x + 4$$

$$5y + 2x = 4$$

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

- ☐ A. The slope of the line $y = 2x + 4$ is .
- ☐ B. The slope of the line $y = 2x + 4$ is undefined.

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

- ☐ A. The slope of the line $5y + 2x = 4$ is .
- ☐ B. The slope of the line $5y + 2x = 4$ is undefined.

Are the graphs of the given equations parallel?

- ☐ No
- ☐ Yes

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27. Write the equation of the line, with the given properties, in slope-intercept form.

Slope = -8 , through $(-6, 7)$

The equation of the line is .

(Type an equation. Use integers or fractions for any numbers in the equation. Type your answer in slope-intercept form. Simplify your answer.)

28. Write the slope-intercept equation for the line containing the given pair of points.

$(-5, 3)$ and $(5, 5)$

The slope-intercept equation is .

(Type an equation. Use integers or fractions for any numbers in the equation. Simplify your answer.)

29. Simplify.

$(ab^5)(a^7b^4)$

$(ab^5)(a^7b^4) =$

30. Divide and simplify.

$$\frac{42x^{14}y^4}{7x^3y}$$

Choose the correct answer below.

☐ A. $42x^{11}y^4$

☐ B. $6x^{4.7}y^4$

☐ C. $6x^{11}y^3$

☐ D. $6x^{17}y^5$

31. Simplify.

$(2x^6)^2(9x^3)$

$(2x^6)^2(9x^3) =$

(Simplify your answer. Use positive exponents only.)

32. For the following polynomial
- (a) list the degree of each term
 - (b) determine the leading term and the leading coefficient
 - (c) determine the degree of the polynomial.

$$5a^3 - 1 + 4a^8$$

(a) The degree of the first term is .

The degree of the second term is .

The degree of the third term is .

(b) The leading term of the polynomial is .

The leading coefficient of the polynomial is .

(c) The degree of the polynomial is .

33. Add.

$$(6x^6 + 3x^4 - x^3 + 7x) + (-x^6 + 6x^3 - 6x^2 + 7x^4)$$

$$(6x^6 + 3x^4 - x^3 + 7x) + (-x^6 + 6x^3 - 6x^2 + 7x^4) = \boxed{}$$

(Simplify your answer.)

34. Multiply the monomial and the polynomial.

$$5x^4(3x + 5)$$

$$5x^4(3x + 5) = \boxed{} \text{ (Simplify your answer.)}$$

35. Find the product.

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

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

36. Multiply.

$$(4y^2 - 1)(4y^2 + 1)$$

$$(4y^2 - 1)(4y^2 + 1) = \square$$

37. Multiply using the rule for the square of a binomial.

$$(x - 8)^2$$

$$(x - 8)^2 = \square$$

38. Subtract the polynomials.

$$(6s^2 + 8st - 2t^2) - (8s^2 - 6st + 14t^2)$$

$$(6s^2 + 8st - 2t^2) - (8s^2 - 6st + 14t^2) = \square$$

39. Square the binomial.

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

The answer is $\square$.

(Simplify your answer.)

40. Find the quotient.

$$\frac{10w^9p^{10} - 6w^7p^8 + 12w^4p^5}{2w^4p}$$

The quotient is

$$\square.$$

41. Divide.

$$(x^2 - 9x + 14) \div (x - 2)$$

$$(x^2 - 9x + 14) \div (x - 2) = \square$$

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42. Express using positive exponents. Then, if possible, simplify.

$$\left(\frac{x}{4}\right)^{-5}$$

$$\left(\frac{x}{4}\right)^{-5} = \square$$

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

43. Multiply and simplify. Give answers using positive exponents.

$$(2p^{-19}b^{15}) \cdot (-8p^{-11}b^{-5})$$

$$(2p^{-19}b^{15}) \cdot (-8p^{-11}b^{-5}) = \square$$

(Simplify your answer. Type exponential notation with positive exponents.)

44. Simplify. Do not use negative exponents in the answer.

$$\frac{16y^{-8}}{4y^{-11}}$$

$$\frac{16y^{-8}}{4y^{-11}} = \square$$

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

45. Convert to scientific notation.

$$240,000,000,000$$

$$240,000,000,000 = \square$$

(Use scientific notation. Use the multiplication symbol in the math palette as needed.)

46. Multiply. Write the result using scientific notation.

$$(5.8 \times 10^4)(6.6 \times 10^{-2})$$

$$(5.8 \times 10^4)(6.6 \times 10^{-2})$$

$$= \square$$

(Simplify your answer. Use scientific notation. Use the multiplication symbol in the math palette as needed.)

47. Factor. Remember to use the largest common factor and to check by multiplying. Factor out a negative factor if the first coefficient is negative.

$$x^9y^9 - x^8y^7 + x^7y^6 + x^6y^6$$

$$x^9y^9 - x^8y^7 + x^7y^6 + x^6y^6 = \square \text{ (Factor completely.)}$$

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48. Factor by grouping, if possible, and check.

$$2x^3 + 3x^2 - 10x - 15$$

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

- ☐ A. $2x^3 + 3x^2 - 10x - 15 = \blacksquare$ (Factor completely.)
☐ B. The polynomial is not factorable

49. Factor the trinomial.

$$s^2 + 8s + 15$$

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

- ☐ A. $s^2 + 8s + 15 = \blacksquare$ (Factor completely.)
☐ B. The polynomial is prime.

50. Factor the trinomial completely.

$$-b^3 + 6b^2 + 27b$$

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

- ☐ A. The complete factorization is $-b^3 + 6b^2 + 27b = \blacksquare$.
☐ B. The polynomial is prime.

51. Factor completely. Check by multiplying.

$$u^2 + 2uz + 2z^2$$

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

- ☐ A. $u^2 + 2uz + 2z^2 = \blacksquare$
☐ B. The polynomial is prime.