

Math Placement - Level 2 Review

1. Use the rule for order of operations to simplify the expression as much as possible:

$$108 - 2(7 \cdot 9 - 13)$$

3. Mixed Numbers to Improper Fractions

Express the following fractions as improper fractions. Write your answer in simplest form.

$$2\frac{1}{8} =$$

$$4\frac{4}{6} =$$

$$6\frac{8}{9} =$$

$$3\frac{6}{7} =$$

5. Solve $6x + 6x = 48$

7. Simplify $31 - 2 \cdot 13$

9. Add or Subtract

$$\frac{2}{3} + \frac{4}{3} =$$

$$\frac{6}{5} - \frac{9}{5} =$$

$$\frac{8}{9} + \frac{3}{2} =$$

$$\frac{9}{4} - \frac{3}{7} =$$

2. Perform the indicated operations.

$$\frac{(5.2 + 7.1)^2 - 57.195}{28.5 - 8.7 - 7.5}$$

4. Improper Fractions to Mixed Numbers

Express the following fractions as mixed numbers. Write your answer in simplest form.

$$\frac{38}{8} =$$

$$\frac{21}{5} =$$

$$\frac{27}{6} =$$

$$\frac{33}{7} =$$

6. Write this decimal in numbers.

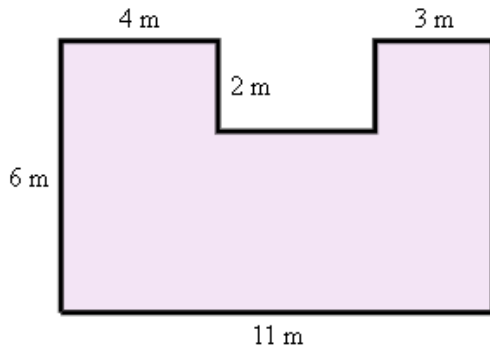
one hundred ninety and four tenths

8. Write the number four thousand seven hundred twenty six
(Do not write a comma)

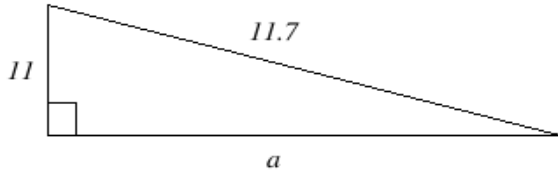
10. Round 0.371 to the nearest hundredth

Math Placement - Level 2 Review

11. Find the perimeter and area



14. Find the unknown length.



$a = \text{cm}$ (If needed, round to 2 decimal places.)

17. An ad for steel-belted radial tires promises 15% better gas mileage. If Kathleen's SUV has gotten 22.7 miles per gallon in the past, what mileage can she expect after the new tires are installed?

Round your answer to the nearest tenth as needed.

_____mpg

20. Convert each unit:

600 seconds = minutes

3 hours = minutes

12. 200% of what number is 830?

13. The Cole's family room measures 14 feet by 24 feet. They are covering the floor with square tiles that measure 1 foot on a side and cost \$ 0.94 each. How much will they spend on the tile?

\$ _____

15. 17.39 is 37% of what number?

16. Add $\frac{2}{3} + \frac{5}{21} + \frac{2}{7}$ and write the result in simplified form.

18. 0.6% of 22 is what number?

19. (1 pts)

Multiply. Write your answer in lowest terms.

$$\frac{7}{9} \cdot \frac{1}{8} \cdot \frac{3}{7}$$

21. Solve the equation, writing your answer as a fraction in reduced form

$$-\frac{4}{9}y = \frac{16}{9}$$

Math Placement - Level 2 Review

22. Divide. Write your answer in lowest terms.

$$\frac{10}{11} \div \frac{5}{1}$$

24. Write the improper fraction $\frac{38}{7}$ as a mixed number.

25. Solve the equation

$$\frac{1}{4}y + 3 = \frac{1}{8}y.$$

27. Solve for x . Give your answer as a reduced fraction if needed.

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

23. Convert $\frac{1}{3}$ into a decimal.

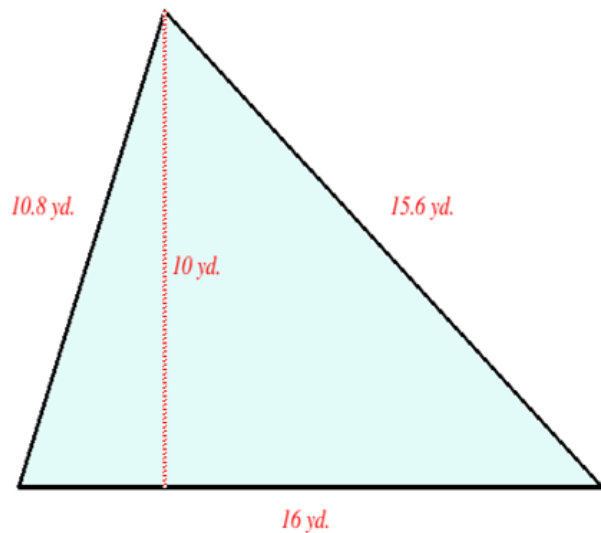
$$\frac{1}{3} =$$

26. Identifying Coefficients.

Complete the table below by Identifying the Coefficient for each Term

Term	Coefficient
x	
$\frac{7x}{8}$	
$\frac{1}{3}x$	
$-8abc$	

28. Finding the Perimeter and Area of a Triangle. Round your final answers to two decimal places as needed.



Math Placement - Level 2 Review

29. Scott bought a large bag of cookies at the bakery. He ate $\frac{1}{6}$ of a bag and his sister ate $\frac{1}{3}$ of a bag.

What fraction of the bag did they eat?

What fraction of the bag remains?

31. Percent Increase and Decrease Applications

Solve the percent increase and decrease problems. Round your results to three decimal places as needed.

Sergio changed careers after college. His old salary was \$ 45000 per year. His new salary is 34 % more per year.

What is his new salary? \$ _____

Jordan started working out. Over one year, he lost 13 % of his original body weight. His original body weight was 219 pounds.

How much does he weigh now?
_____pounds

The population of Maricopa County has been increasing for the past few decades. In 2016, the Maricopa County population is approximately 3.817 million. If the population increases from the current population by 3.56 % over the next 5 years, what will the population be in 2021? _____million

36. Solve the following.

$$1.7x - 0.58 = 1.2x + 1.37$$

30. Completely simplify the expression

$$-11y - 6 + 4y - 9$$

32. Multiply: $\frac{1}{8} \cdot \frac{4}{5}$

Give your answer as a fraction, reduced to lowest terms

33. Divide. Write your answer in lowest terms.

$$\left(-\frac{9}{25}\right) \div \left(-\frac{9}{5}\right)$$

34. The ratio of brownies to lemon bars was 6 to 4. If there were 42 brownies, how many delicious treats were there in all?

35. George can type 52 words per minutes. How many words can he type in 30 minutes?

Use front-end estimating to approximate the solution: words

Determine the exact answer: _____words

Math Placement - Level 2 Review

37. A home improvement store sells square tiles that are 12 inches on a side.

Determine the perimeter of the tiles:

_____ inches

Determine the area of the tiles:

_____ square inches

38. A circle has a radius of 10 inches, Determine it's approximate area and circumference. Use the fact that $\pi \approx 3.14$.

The circumference is _____ inches.

The area is _____ square inches.

39. Write the sentence below as an equation. Use x to represent the number.

six minus three times the number equals six

40. Representing Rates and Unit Rates in Multiple Ways

Represent the following scenario as a rate and a unit rate.

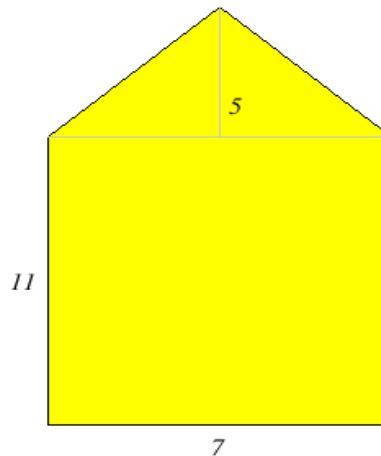
Write your *Unsimplified Rates* as **unsimplified fractions**.

Write your *Simplified Unit Rates* as **whole numbers or decimals rounded to two decimal places**.

Dawn spent \$31.85 on 13 gallons of gas.

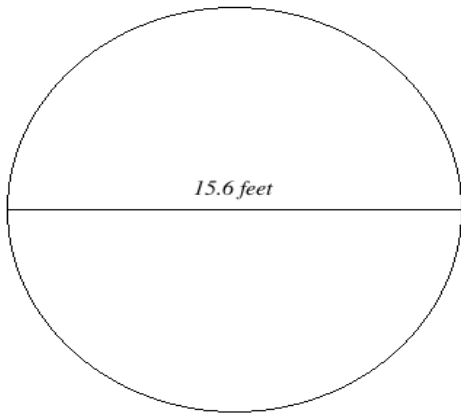
Form	Rate of Dollars to Gallons	Rate of Gallons to Dollars
Unsimplified Rate	<input type="text"/> [⊘] dollars gallons	<input type="text"/> [⊘] gallons dollars
Simplified Unit Rate "per language"	<input type="text"/> [⊘] dollars per gallon	<input type="text"/> [⊘] gallons per dollar

41. Find the area of the shaded region below.



Math Placement - Level 2 Review

42.



A landscaping company is planting grass in the circular courtyard pictured above. Determine the amount of grass (in square feet) needed for the courtyard.

Round your answer to the nearest hundredth. Use 3.14 or the pi button on your calculator.

_____ square feet of grass is needed for the courtyard.

45. Convert 383 % to a decimal.

46. Julie is running for mayor. She needs to get $\frac{2}{5}$ of her votes from minorities. If she needs 20000 votes to win, how many votes does she need from people that are not minorities?

_____ votes

43. Solve the equation $7x + 5 = 2$ algebraically.

44. Order of Operations

Evaluate using the correct order of operations. Use your graphing calculator to check your answer.

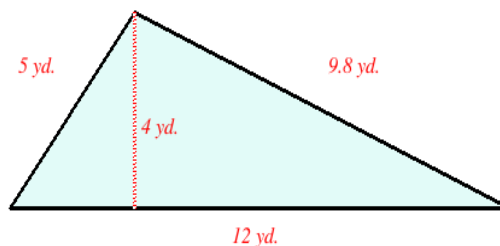
$$\frac{16 \div 4 \times 2}{7 - 5} =$$

$$36 - 5 \times \frac{37 + 3}{2 \times 5} =$$

$$\left(\frac{22 - 4}{9 - 3}\right)^3 =$$

$$12 + 4 \times 6 - \left(\frac{6 + 8}{3 - 1}\right)^2 =$$

47. Finding the Perimeter and Area of a Triangle. Round your final answers to two decimal places as needed.



What is the perimeter of the triangle?

What is the area of the triangle?

48. Simplify: $3ky - 6 + 4ky + 5$

49. Using Ratios to Solve Application Problems

Ellie has a collection of robots. For every 5 **robots she made** herself she **bought** 2 at the store.

If Ellie made 25 robots, how many robots did she buy?

Ellie bought _____ robots

Kory is having a pool party. She wants to buy **5 gallons of water** for every 6 **guests**.

If Kory invites 42 guests, how many gallons of water should she buy?

Kory should buy _____ gallons of water

Kate made her friend cookies for her birthday. For every 9 **cookies** Kate made 4 were **chocolate chip cookies**.

If Kate made 36 cookies in total, how many cookies were chocolate chip?

Kate made her friend _____ chocolate chip cookies

Meg loves to read. Her favorite author is Dr. Seuss. For every 7 **books** Meg owns 4 are **Dr. Seuss books**.

If Meg has 20 Dr. Seuss books, how many books does she have in total?

Meg owns _____ books in total

50. Write $\frac{10}{25}$ in lowest terms

51. Use your calculator to approximate the value of each square root to 2 decimal places:

a. $\sqrt{34} \approx$

b. $\sqrt{293} \approx$

52. Solve $-2(x + 4) + 1 = 3(x + 5)$ for x

53. Solve the equation, $8x + 5 = 7(x + 3) + 1$, for the given variable.

54. Solve for x :

$$\frac{1}{5}x + \frac{1}{4} = 5$$

55. Multiply:

$$\begin{array}{r} 600 \\ \times 600 \\ \hline \end{array}$$

56. Simplify:

$$2(x - 5) - \frac{1}{3}(-3x - 3)$$

57. Write $\frac{3}{8}$ as a decimal.

Math Placement - Level 2 Review

58. A 18 oz bottle of dish soap sells for \$3.74.
A 47 oz bottle of dish soap sells for \$4.41.

(round all answers to four decimal places)

The unit price of the 18 oz bottle is
\$_____ per oz

The unit price of the 47 oz bottle is
\$_____ per oz

Which of the two is a better deal?

- A. The 18 oz bottle for \$3.74
- B. The 47 oz bottle for \$4.41

59. The decimal 0.16 is equivalent to what percent?

_____ %

Key - Form 1

1. 8
2. 7.65
3. $\frac{17}{8} \sim \frac{14}{3} \sim \frac{62}{9} \sim \frac{27}{7}$
4. $4\frac{3}{4} \sim 4\frac{1}{5} \sim 4\frac{1}{2} \sim 4\frac{5}{7}$
5. 4
6. 190.4
7. 5
8. 4726
9. $2 \sim -\frac{3}{5} \sim \frac{43}{18} \sim \frac{51}{28}$
10. 0.37
11. $38 \sim m \sim 58 \sim \text{square m}$
12. 415
13. 315.84
14. 4
15. 47
16. $1\frac{4}{21}$
17. 26.1
18. 0.132
19. $\frac{1}{24}$
20. $10 \sim 180$
21. -4
22. $\frac{2}{11}$
23. $\frac{1}{3} = 0.\overline{3}$ is a repeating decimal.
24. $5\frac{3}{7}$
25. -24
26. $1 \sim \frac{7}{8} \sim \frac{1}{3} \sim -8$
27. $\frac{5}{8}$
28. $42.4 \sim \text{yards} \sim 80 \sim \text{square yards}$
29. $\frac{1}{2} \sim \frac{1}{2}$
30. $-7y - 15$
31. $60300 \sim 190.53 \sim 3.953$
32. $\frac{1}{10}$
33. $\frac{1}{5}$
34. 70
35. $1500 \sim 1560$
36. 3.9
37. $48 \sim 144$
38. $62.8 \sim 314$
39. $6 - 3x = 6$
40. $\frac{31.85}{13} \sim \frac{13}{31.85} \sim 2.45 \sim 0.41$
41. 94.5
42. 191.13 or 191.04
43. -0.42857142857143
44. $4 \sim 16 \sim 27 \sim -13$
45. 3.83
46. 12000
47. $26.8 \sim \text{yards} \sim 24 \sim \text{square yards}$
48. $7ky - 1$
49. $10 \sim 35 \sim 16 \sim 35$
50. $\frac{2}{5}$
51. $5.83 \sim 17.12$
52. -4.4
53. 17
54. $\frac{95}{4}$
55. 360000
56. $3x - 9$
57. 0.375
58. $0.2078 \sim 0.0938 \sim \text{The 47 oz bottle for } \4.41
59. 16