

• For the test, be sure to show all work!

PROBLEMS:

For problems 1–9, simplify the expression.

1. $-19 - 2(-7)$

2. $56 - 74$

3. $-33 - 13$

4. $-42 \div 7$

5. $(-87) + (-12)$

6. $21 - |-13|$

7. $13 + 4(6 - 15) + 2^3$

Evaluate if $x = -2$ and $y = 1$

8.
$$\frac{5y - x}{-y}$$

ANSWERS:1. 2. 3. 4. 5. 6. 7. 8.

PROBLEMS:

9. -8^2

10. $-7(10x+4)$

Solve the following equations:

11. $9x + x = -60$

12. $12 = y - 3y$

13. $5m - 2 = x - 10$

14. $6 + 2(3n - 1) = 28$

15. $7(2 + x) = 4x - 1$

ANSWERS:

9.

10.

11.

12.

13.

14.

15.

PROBLEMS:**ANSWERS:**

For problems 1 –14, perform the indicated operations.
Simplify to lowest terms, if possible. Write as fractions.
(Do not use decimal answers for any problems on the test.)

1. $\frac{56}{102}$

1.

2. $\frac{7}{8} + \frac{1}{20}$

2.

3. $\frac{9}{11} - \frac{2}{3}$

3.

4. $\frac{5m}{12} - \frac{2m}{9}$

4.

5. $\frac{5a}{11} + \frac{2}{55}$

5.

6. $-\frac{5}{6} - \frac{3}{7}$

6.

PROBLEMS:

7. $36\frac{3}{20} - 32\frac{5}{6}$

8. $\frac{7m}{8n^2} - \frac{3}{8n^2}$

9. $-\frac{6}{7} \cdot \frac{42}{5}$

10. $\left(-\frac{81}{19}\right)\left(-\frac{38}{27}\right)$

11. $\frac{9a^2}{2b} \div \frac{3a^3}{4b^3}$

12. $\frac{2 + \frac{3}{4}}{1 - \frac{1}{8}}$

13. $\left(-\frac{5}{3}\right)^3$

14. $\left(\frac{1}{10} + \frac{3}{20}\right)\left(\frac{1}{5} - 1\right)$

ANSWERS:

7.

8.

9.

10.

11.

12.

13.

14.

PROBLEMS:

15. The Minnie Mouse Drama Group is planning a barbeque. If they have purchased $27\frac{1}{4}$ pounds of hamburger for the barbeque, how many $\frac{1}{4}$ pound hamburgers can they make?

16. Find the area of rectangle with a width of $5\frac{2}{7}$ m. and a length of 7 m.

17. One batch of low-cholesterol turkey chili calls for $1\frac{1}{2}$ lb of roasted turkey breast. How much turkey is needed for 5 batches?.

For problems 18-20, solve the equation.

18. $\frac{x}{3} + 2 = \frac{x}{2} + 8$

19. $-\frac{7}{9}x = -\frac{5}{18} - \frac{4}{18}$

20. $-\frac{3}{5}b = -\frac{9}{10}$

ANSWERS:

15.

16.

17.

18.

19.

20.

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PROBLEMS:

Write in words.

1. 102.00701

For problems 2-6, perform the indicated operations.
Round to the nearest thousandth if necessary.

2. $11.563 + 0.73 + 77.6971$

3. $7.001 - 937.07$

4. 231.5×10.02

5. $(-0.04501) \div (-0.007)$

Insert $<$, $>$, or $=$ to make a true statement.

6. 491.00231 [] 491.002

Write the decimal as a fraction. Simplify to lowest terms.

7. 0.712

ANSWERS:1. 2. 3. 4. 5. 6. 7.

PROBLEMS:

For problems 8-9, write the fraction as a decimal.
Round to the nearest thousandth, if necessary.

8. $-\frac{19}{23}$

9. $17\frac{3}{32}$

For problems 10-12, perform the indicated operations and simplify.

10. $(-1.03)^2 - 1.007$

11. $\frac{0.49 - 7.7}{0.07}$

12. $0.83x^2 + 1.6 - 0.6x^2 + 3.02x + 0.4$

For problems 13-14, find the square root and simplify.
Round to the nearest thousandth, if necessary.

13. $\sqrt{2001}$

14. $\sqrt{3.61}$

15. Evaluate $vt + \frac{1}{2}at^2$ when
 $v = 35$ and $t = 1.2$ and $a = 10$

ANSWERS:8. 9. 10. 11. 12. 13. 14. 15.

PROBLEMS:

16. A 14.5 ft. beam is to be attached to a vertical beam 3.5 ft. above a horizontal support beam. How long must the horizontal support beam be to attach to the bottom of the 14.5 ft. beam?

ANSWERS:

16.

17. Hamburger meat is on sale at \$2.89 a pound. How much will you pay for 3.5 pounds of hamburger to the nearest cent?

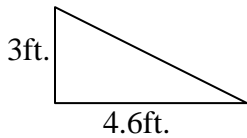
17.

18. Find the circumference of a circle with a radius of 2.3 cm. Give an exact measurement and an approximate measurement. Use 3.14 for π .

18.

Find the area of the triangle.

19.



19.

Solve.

20. $3.6n - (n - 13.2) = 10(0.4n + 0.62)$

20.

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PROBLEMS:

For problems 1-3, write each percent as a decimal.

1. 0.6%

2. 515%

3. 73.5%

For problems 4-6, write each decimal as a percent.

4. 0.055

5. 0.725

6. 2.6

For problems 6-9, write each percent as a fraction in simplest form.

7. 10.2%

ANSWERS:

1.

2.

3.

4.

5.

6.

7.

PROBLEMS:

8. $16\frac{2}{3}\%$

9. 8.5%

For problems 10-13, write the fraction as a percent.
Round to the nearest hundredth if necessary.

10. $\frac{5}{6}$

11. $3\frac{1}{16}$

12. $\frac{5}{4}$

For problems 13-20, solve the problem. Round to the nearest hundredth if necessary.

13. What is 40% of 7500?

14. 16.5 is 5.5% of what number?

15. What percent of 540 is 124.2?

ANSWERS:

8.

9.

10.

11.

12.

13.

14.

15.

PROBLEMS:

16. The number of violent crimes in a city decreased from 675 to 534. Find the percent of decrease. Round to the nearest tenth.

ANSWERS:

16.

17. A sales tax of \$1.53 is added on to an item's price of \$152.99. Find the sales tax rate. Round to the nearest whole percent.

17.

18. **a.** A stereo system has a purchase price of \$426. If the sales tax is 8.2%, what is the tax on the item?

18.

b. What is the total purchase price?

19. Find the simple interest earned on \$2000 saved for $3\frac{1}{2}$ years at an interest rate of 9.25%.

19.

20. \$1365 is compounded annually at 8%. Find the total amount in the account after 5 years.

20.

PROBLEMS:

21. Write the ratio in simplest form.
3.5 centimeters to 75 centimeters.

22. Write the rate in simplest form.
6 professors for 20 graduate research assistants.

23. State which product is the better buy. Show your work.

Peanut Butter: 18 ounces for \$2.50
25 ounces for \$3.89

24. Solve the proportion.

$$\frac{2\frac{1}{2}}{6} = \frac{3}{m}$$

25. On an architect's blueprint, 1 inch = 12 feet.
Find the length of a wall represented by a
 $3\frac{3}{8}$ inch line on the blueprint.

ANSWERS:

21.

22.

23.

24.

25.

PROBLEMS

ANSWERS

<p>For problem 1, find the mean, median and mode for the following list of values.</p> <p>1. 560,620,123,400,410,300,400,780,430,450</p>	<p>1-a.</p> <p>1-b</p> <p>1-c</p>
<p>For problems 2-5, graph the equation. Use a “t” chart to locate your points. Show your work.</p> <p>2. $2x - 3y = 12$</p>	
<p>3. $y = 4x - 2$</p>	

4. $y = 2$

.

5. $x = -4$

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PROBLEMS:

1. Write as a unit fraction: 12 pies to 48 people.

2. Find the supplement of a 102.3° angle.

For problems 3-7, use the order of operations to simplify.

3. $(-2)^2$

4. $19 - (6 - 8)^3 + \sqrt{100 - 36}$

5. $\frac{14 + (18 - 2 \cdot 4)}{4^2 - 10}$

6. $9\frac{5}{7} - 2\frac{5}{6}$

7. $\sqrt{0.081}$

ANSWERS:

1.

2.

3.

4.

5.

6.

7.

PROBLEMS:

For problems 8-9, write as a percent.
Round to the nearest thousandth, if necessary.

8. $\frac{4}{9}$

9. 0.035

For problems 10-12, write as a fraction. Simplify if necessary.

10. 3.145

11. 6%

12. 16.4%

For problems 13-14, write as a decimal. Round to the nearest thousandth, if necessary.

13. $\frac{3}{8}$

14. $24\frac{2}{5}\%$

15. Evaluate $-xy \div y$ when $x = -4$ and $y = 20$

ANSWERS:8. 9. 10. 11. 12. 13. 14. 15.

PROBLEMS:

16. Combine like terms.

$$9x^3 - 15.4 + 8x - 12x^3 + 4x^2 + x^4 - 4.9 - x$$

17. Multiply.

$$4x(x+1)$$

18. Multiply and simplify.

$$\frac{9x^3}{10y} \cdot \frac{25y}{12x}$$

19. Divide and simplify.

$$\frac{10m}{9n^2} \div \frac{5}{12n}$$

For problems 20-24, solve and check.

20. $m - 25 = -31$

21. $\frac{3}{5}t - 7 = \frac{1}{4}$

ANSWERS:

16.

17.

18.

19.

20.

21.

PROBLEMS:

22. $6.5h - 16.4 = 9h + 3.2$

23. $2.4(n - 5) + 8 = 1.6n - 14$

24. $\frac{u}{14} = \frac{-3}{8}$

For problems 25-28, use the unit fraction for the conversions.

25. 78 ft. to yards.

26. 4500 lb. to tons.

27. 400 ml to liters.

ANSWERS:

22.

23.

24.

25.

26.

27.

PROBLEMS:

28. 4.8 m to cm.

Convert. Round to the nearest hundredth if necessary.

29. 77° F to degrees Celsius.

Convert. Round to the nearest hundredth if necessary.

30. -20° C to degrees Fahrenheit.

For problems 31-32, use 3.14 for π .

31. Calculate the volume of a can that is $2\frac{7}{9}$ inches in height and has a radius of 3 inches.

32. Calculate the volume of a ball with a 12 in diameter.

For problems 33-34, round to the nearest tenth if necessary.

33. A restaurant increases its prices on a dish from \$8.95 to \$9.75. What is the percent of increase?

ANSWERS:

28.

29.

30.

31.

32.

33.

ANSWERS:

PROBLEMS:

34. Katrina answered 45 questions out of 70 correctly. What percent of the total questions did she answer correctly?

34.

35. How much simple interest is earned if \$680 is invested at 4.2% for a half year?

35.

36. \$3200 is invested at 6% APR compounded semiannually. What will be the balance in 2 years?

36.

37. Calculate the mean, median and mode for the following set of ages of participants in a survey.

28,21,45,65,54,38,39,35,36,32,40

37.

38. Graph the following equation. Use a “t” chart to find your points. Keep the graph in units of 1.

$$x + 3y = 12$$