

INCOMING 8TH GRADERS

Dear Parents,

To help student retain math concepts and skills learned this school year, a summer math packet has been created for your child. The packet contains practice that will review, maintain, and reinforce skills and concepts learned during the school year. Parent participation to review the student's work is encouraged. The math packet is to be completed and turned in at the beginning of eighth grade.

In addition to the worksheets in the packet, there are numerous activities that the student can participate in that will also enhance their skills. Here is just a very short list:

Puzzles (magic squares, Sudoku, mazes, logic puzzles)

Card games (cribbage, rummy, gin)

Board games (monopoly, chess, battleship – any strategic game)

Have an enjoyable summer. I look forward to seeing you in the fall!

Sincerely,

Lynn Schumaker

8th Grade Summer Study Packet

Evaluate the expression when $x = 6$, $y = 10$, $z = 12$.

1. $13-x =$

4. $\frac{y}{z} =$

2. $\frac{1}{2}z^2 =$

5. $-2(y-z) =$

3. $yz =$

What Property am I?

6. $a+(b+c) = (a+b)+c$

7. $m \cdot n = n \cdot m$

8. $9(x+3) = (9 \cdot x)+(9 \cdot 3)$

Simplify.

9. $4(3m)$

10. $4(c+2)+c$

11. $5d+(3-d)$

12. $-5t+7t-2t$

Solve the Equation.

13. $-13z = 169$

14. $j - 9.2 = -3.6$

15. $\frac{r}{4} = -14$

16. $51 = -3 - \frac{b}{2}$

17. $-1.2 + y = 3.7$

18. $0.8 = \frac{a}{6.5}$

19. $3.6 = 2.4v$

20. $6(x+3) - 1 = -7$

Write each sentence as an equation.

21. A number divided by 3 and increased by 5 is equal to -9.

22. Six plus 4 times a number is equal to 16 minus the number

Solve.

23. $x + 5 < -4$

25. $-3 < \frac{b}{18}$

24. $-6y \geq 72$

26. $-6x + 17 > 5 - 2x$

Write the fraction in simplest form.

30. $\frac{35k^2}{28k}$

31. $\frac{64a^5}{8a^3}$

32. $\frac{24mp}{20m^2p^2}$

Find the product. Write your answer using ONLY positive exponents.

33. $t^4 \cdot t^0 =$

34. $y^2 \cdot y^{-5}$

35. $m^3 \cdot m^5$

36. $b^{-4} \cdot b^{-1}$

37. $2a^3 \cdot 4a^2$

38. $(x^{-2})^{-3}$

Simplify the expression.

$$39. \frac{x}{9} + \frac{x}{15}$$

$$40. \frac{-6h}{13} + \frac{2h}{39}$$

Solve the equation.

$$41. \frac{6}{13}x = 24$$

$$42. \frac{2}{5}c - 5 = 17$$

Solve the proportion.

$$43. \frac{f}{12} = \frac{3}{36}$$

$$44. \frac{x}{48} = \frac{5}{6}$$

$$45. \frac{7}{a} = \frac{56}{96}$$

$$46. \frac{6}{7} = \frac{102}{d}$$

Use a proportion or percent equation to answer the question.

47. What percent of 580 is 203?

48. What number is 25% of 125?

Practice

For use with pages 102-107

Perform the indicated operation.

1. $-7.06 + 5.22$

2. $-8.17 + (-12.91)$

3. $13.07 - 20.01$

4. $-6.47 - 10.16$

5. $-15.23 - (-9.57)$

6. $-4.34 - 11.59$

7. $-16.04(-5.25)$

8. $-21.9(14.8)$

9. $18.05(-3.12)$

10. $42.125 \div -6.74$

11. $-96.38 \div -12.2$

12. $-42.822 \div 14.04$

Solve the equation. Check your solution.

13. $21.3 + r = -19.79$

14. $13.49 = -8.56 + a$

15. $-20.57 = m + 3.78$

16. $v - 17.06 = 29.08$

17. $-14.88 = d - 34.76$

18. $-31.45 = p - 12.96$

19. $30.75b = -73.8$

20. $70.448 = -25.16f$

21. $-42.12 = -7.8t$

22. $-13.25 = \frac{k}{-6}$

23. $24.36 = \frac{w}{-7.9}$

24. $\frac{c}{-20.18} = -7.35$

3.2

Practice

For use with pages 125-129

Solve the equation. Check your solution.

1. $10 + 3(x + 2) = 31$

2. $-2(x - 6) + 7 = 35$

3. $-20 - (4x - 1) = -15$

4. $12(x + 3) - 3x = 117$

5. $-25 + 4(2x + 5) = -61$

6. $187 = 19 + 7(13 - x)$

7. $20 = 14 + 3(x + 8)$

8. $-5(2x - 7) + 24 = 89$

9. $-14 = 6x - 8(x + 3)$

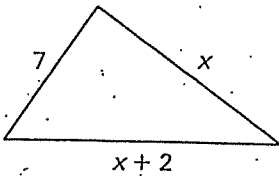
10. $-7x - (10 - x) = -58$

11. $48 = 15 + 6(4 + x) - 3x$

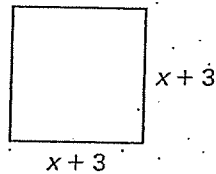
12. $23 - 7(x + 3) + 5x = 10$

Find the value of x for the given triangle, rectangle, or square.

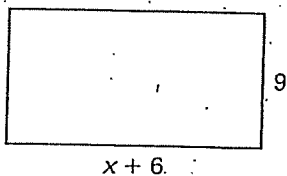
13. Perimeter = 29 units



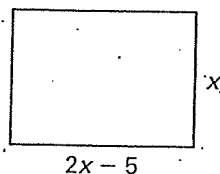
14. Perimeter = 28 units



15. Perimeter = 52 units



16. Perimeter = 38 units



LESSON

4.3

Name _____

Practice

For use with pages 182-186

Tell whether the fraction is in simplest form.

1. $\frac{13}{39}$

2. $\frac{25}{42}$

3. $\frac{15}{51}$

Write two fractions that are equivalent to the given fraction.

4. $\frac{5}{14}$

5. $\frac{7}{16}$

6. $\frac{18}{20}$

7. $\frac{22}{34}$

8. $\frac{14}{35}$

9. $\frac{12}{46}$

Write the fraction in simplest form.

10. $\frac{21}{24}$

11. $\frac{28}{30}$

12. $\frac{39}{52}$

13. $\frac{45}{72}$

14. $\frac{35}{42}$

15. $\frac{14}{63}$

16. You spend 3 hours every day practicing the piano. What fraction of a day do you spend practicing the piano? Give your answer in simplest form.

4.5**Practice**

For use with pages 193-198

Find the product or quotient. Write your answer using exponents.

1. $5^{10} \cdot 5^{11}$

2. $4^8 \cdot 4^9$

3. $6^7 \cdot 6^2 \cdot 6^8$

4. $8^2 \cdot 8^{14} \cdot 8^3$

5. $9^{12} \cdot 9^{13}$

6. $10^7 \cdot 10^{13}$

7. $\frac{3^{16}}{3^8}$

8. $\frac{7^{20}}{7^{14}}$

9. $\frac{11^{19}}{11^{15}}$

10. $\frac{13^5}{13^2}$

11. $\frac{16^8}{16^5}$

12. $\frac{20^9}{20^7}$

Simplify.

13. $d^4 \cdot d^4$

14. $3h^5 \cdot 4h^6$

15. $5g^2 \cdot 8^{16}$

16. $8e^9 \cdot 7e^{10}$

17. $9w^3 \cdot 2w^4 \cdot w^2$

18. $5v^6 \cdot 2v^4 \cdot 2v^3$

19. $\frac{x^{15}}{x^9}$

20. $\frac{9y^{18}}{15y^2}$

21. $\frac{12s^9}{32s^2}$

22. $\frac{15z^{11}}{18z^7}$

23. $\frac{30a^5 \cdot a^3}{12a}$

24. $\frac{6h^{11} \cdot 7h^6}{28h^3}$

5.3**Practice**

For use with pages 230-235

Find the sum or difference.

1. $\frac{7}{12} + \frac{7}{10}$

2. $\frac{8}{9} + \left(-\frac{10}{21}\right)$

3. $-\frac{4}{17} + \frac{3}{5}$

4. $-\frac{3}{4} - \left(-\frac{5}{18}\right)$

5. $\frac{1}{6} - \frac{9}{22}$

6. $\frac{11}{12} - \frac{7}{15}$

7. $\frac{9}{20} - \frac{3}{16}$

8. $-\frac{5}{14} - \left(-\frac{9}{10}\right)$

Evaluate the expression when $x = \frac{5}{6}$ and $y = -\frac{3}{10}$.

9. $x + y$

10. $x - y$

11. $y - x$

12. $-y - x$

Find the sum or difference.

13. $5\frac{2}{7} + 7\frac{1}{6}$

14. $4\frac{5}{9} - 3\frac{2}{15}$

15. $-2\frac{8}{9} + 2\frac{5}{6}$

16. $-1\frac{5}{8} - \left(-2\frac{1}{5}\right)$

17. $1\frac{3}{4} - 4\frac{3}{14}$

18. $-6\frac{3}{25} + 3\frac{1}{2}$

19. $4\frac{9}{16} + \left(-3\frac{3}{10}\right)$

20. $-1\frac{2}{3} - \left(-1\frac{4}{11}\right)$

5.4**Practice**

For use with pages 237-241

Find the product.

1. $\frac{14}{25} \cdot \left(-\frac{3}{7}\right)$

2. $-\frac{20}{33} \cdot \left(-\frac{3}{11}\right)$

3. $51 \cdot \left(-\frac{5}{6}\right)$

4. $-\frac{7}{22} \cdot (-4)$

5. $2\frac{1}{12} \cdot \left(-10\frac{4}{5}\right)$

6. $-6\frac{3}{16} \cdot 5\frac{3}{7}$

7. $-1\frac{4}{27} \cdot \left(-3\frac{6}{11}\right)$

8. $-5\frac{1}{9} \cdot 2\frac{4}{13}$

Evaluate the expression.

9. $\frac{1}{4} \cdot \frac{8}{9} \cdot \left(-\frac{3}{5}\right)$

10. $\frac{4}{7} \cdot \left(-\frac{1}{8}\right) - \frac{3}{4}$

11. $\frac{7}{10} \cdot \frac{2}{9} + \frac{2}{3}$

Simplify the expression.

12. $\frac{20x}{9} \cdot \frac{36x^4}{5}$

13. $\frac{75x^4}{8} \cdot \frac{14x}{3}$

14. $-\frac{8x}{15} \cdot \left(-\frac{4x}{7}\right)$

15. $-\frac{x^6}{11} \cdot \left(-\frac{5x^8}{3}\right)$

16. $-\frac{13x^2}{10} \cdot \frac{6x^3}{5}$

17. $-\frac{x^6}{12} \cdot \left(-\frac{11x^5}{12}\right)$

18. $\frac{xy}{6} \cdot \frac{2x^3y}{3}$

19. $-\frac{x^2y}{4} \cdot \frac{10y^2}{3}$

5.5**Practice**

For use with pages 242-246

State the reciprocal of the number.

1. $-\frac{24}{7}$

2. -264

3. 3.45

4. 0.01

Find the quotient.

5. $\frac{7}{20} \div \frac{5}{6}$

6. $-\frac{11}{24} \div \frac{7}{10}$

7. $\frac{8}{33} \div \left(-\frac{8}{9}\right)$

8. $-\frac{7}{5} \div \frac{19}{40}$

9. $8\frac{9}{20} \div 1\frac{7}{40}$

10. $10\frac{9}{14} \div \left(-3\frac{1}{2}\right)$

11. $\frac{16}{25} \div 2$

12. $48 \div \left(-\frac{4}{5}\right)$

13. $12\frac{3}{4} \div \left(-\frac{11}{12}\right)$

14. $5\frac{7}{11} \div 20$

15. $-24\frac{4}{9} \div \frac{8}{15}$

16. $-\frac{10}{33} \div 12$

17. $-\frac{18}{35} \div \left(-2\frac{4}{5}\right)$

18. $30 \div \left(-4\frac{1}{8}\right)$

19. $8\frac{7}{10} \div \frac{33}{50}$

20. $-\frac{15}{26} \div \left(-\frac{5}{14}\right)$

Evaluate the expression when $x = -2\frac{5}{8}$, $y = \frac{3}{10}$, and $z = 6\frac{3}{4}$.

21. $x \div y$

22. $y \div z$

23. $x \div z$

24. $z \div x \cdot y$

6.1**Practice**

For use with pages 269-274

Tell whether the ratio is in simplest form. If not, write it in simplest form.
Then, write the ratio in two other ways.

1. 4 to 18

2. 4:6

3. $\frac{7}{9}$

4. $\frac{39}{13}$

5. 28:21

6. 17 to 44

7. 44:16

8. 63 to 18

9. $\frac{48}{28}$

Order the ratios from least to greatest.

10. 7:2, 12 to 4, $\frac{20}{6}$, 21 to 14, 10:5

11. $\frac{12}{16}$, 7 to 10, 8:12, 9 to 15, $\frac{4}{18}$

Find the unit rate.

12. $\frac{72 \text{ people}}{3 \text{ buses}}$

13. $\frac{20 \text{ ounces}}{2.5 \text{ servings}}$

14. $\frac{288 \text{ mi}}{12 \text{ gal}}$

15. $\frac{10.4 \text{ gal}}{4 \text{ min}}$

16. $\frac{1125 \text{ calories}}{4.5 \text{ hours}}$

17. $\frac{\$375}{15 \text{ shares}}$

6.8**Practice**

For use with pages 313–317

In Exercises 1–4, make a tree diagram to find all the possible choices. Check your answer using the counting principle.

1. Choose turkey, roast beef, or ham with white, whole wheat, or rye bread.

2. Choose a sedan, truck, SUV, or minivan in red, blue, black, or green.

3. Choose a T-shirt, a button-down shirt, or a sweater, jeans or khakis, and either a red coat or a blue coat.

4. Choose a ranch, two-story, or tri-level house, white or gray siding, and either a one-car or two-car garage.

5. A menu has 3 choices for salad, 5 main dishes, and 4 desserts. How many different meals are possible if you select a salad, a main dish, and a dessert?

6. You are planning a trip. You can go to Phoenix, Las Vegas, San Diego, or Los Angeles, you can fly or drive, and you can stay for 3, 4, or 5 days. How many possible trips are there?

7. The telephone extensions at a company use 4 digits.
 - a. How many extensions are possible if there are no restrictions?

 - b. How many extensions are possible if the first digit cannot be 0 or 9?

 - c. How many extensions are possible if the first digit can only be 1?



Practice

For use with pages 334–339

Use a proportion to answer the question.

1. What percent of 70 is 21?
2. What percent of 48 is 12?
3. What percent of 56 is 42?
4. What percent of 105 is 63?
5. What number is 42% of 150?
6. What number is 70% of 130?
7. What number is 48% of 175?
8. What number is 15% of 160?
9. 150 is 15% of what number?
10. 21 is 12% of what number?
11. 198 is 33% of what number?
12. 264 is 55% of what number?
13. The population of a town in 2004 was 12,000. The population of the town in 1994 was 10,800. What percent of the 2004 population is the 1994 population?
14. The Royal Opera House Orchestra in London, England, includes 13 musicians who play the viola. The musicians in the viola section make up $12\frac{1}{2}\%$ of the orchestra. How many musicians are in the Royal Opera House Orchestra?

