8th grade Math Midterm Review Packet

1) Write $4\frac{3}{16}$ as a decimal.

Find the value of each expression in simplest form.

2) $\frac{5}{8}+\frac{1}{6}$

3) $-2\frac{4}{9}-1\frac{1}{3}$

4) $-\frac{5}{12}\bullet\frac{8}{15}$

5) $-3\frac{3}{4}\div 2\frac{1}{12}$

6) What is $\frac{11}{20}$ written as a percent?

7) What is 84% written as a fraction in simplest form?

8) What is 8.5% written as a decimal?

9) What is 0.052 written as a percent?

10) There are 250 students at St. Mary's Middle School and 50 of them are in the choir. What is the percent of students who are in the choir?

Solve each problem using the percent equation or percent proportion.

11) What is 15% of 250.2?

12) 16 is 12.5% of what number?

13) Kaitlyn want to buy a CD for $16. If there is 7% sales tax, what is is the amount of the sales tax on the CD?

14) What is the percent of change in temperature if the temperature was 80°F at 1:00 pm and 84°F at 3:00 pm?

15) How much is the sale price of a $195.65 table lamp that is on sale for 18% off? Round to the nearest cent.

16) What is the simple interest on $375 at 6.75% for 1 $\frac{1}{4}$ years?

17) How much is in a savings account that started with $500 and earned 7.5% compound interest for 2 years?

18) Define a rational number.

Write each expression in exponential form.

19) $3 \cdot 3 \cdot 3 \cdot 3$

20) (-7)(-7)(-7)

21) $2 \cdot 5 \cdot 5 \cdot 2 \cdot 2$

22) $a \cdot b \cdot a \cdot a \cdot b$

Simplify. Express using positive exponents.

23) $\frac{x^5}{x^3}$

24) $x^3y^2x^2y^8$

25) $(2m^3)^3$

26) $(a^7)^2$

27) $\frac{b^{10}}{b^4}$

28) $2^{-3} \cdot 2^{-4}$

29) $x^{-3} \cdot x^7$

30) x^{-4}

Simplify. Express using positive exponents.

31) $2 \cdot 2^0 \cdot 2^2$

32) $\frac{a^5b^{10}}{a^3b^8}$

33) Write the definition for a monomial.

34) Explain the difference between 2^3 and 2 x 3.

35) The circumference of Earth is 24,901 miles. Write the circumference of Earth in scientific notation.

36) A Petri dish contains 2.53×10^{11} bacteria. Write the number of bacteria in standard form.

37) Write 8.83×10^{-7} in standard form.

38) Write 0.0000023 in scientific notation.

39) The population of Pleasantville is 7.78×10^{3}. The population of Sunnyvale is 1.68×10^{6}. How many more people live in Sunnyvale than Pleasantville? Write your answer in scientific notation.

Solve the following problems. Write your answer in scientific notation.

40) $\frac{1.2\times10^{6}}{8.0\times10^{3}} =$

41) $\left(1.44\times10^{10}\right)\left(2.4\times10^{2}\right) =$

42) $\left(1.357\times10^{9}\right)+\left(5.9\times10^{5}\right) =$

43) $\left(8.71\times10^{4}\right)-\left(6.34\times10^{1}\right) =$

44) A circular swimming pool holds 1.22×10^{6} cubic inches of water. It is being filled at a rate of 1.5×10^{3} cubic inches per minute. About how long will it take to fill the swimming pool?

Write an equation to model each situation.

45) Ten increased by a number is -8.

46) The difference of -5 and a number is 12.

47) The product of a number and 4 is 32.

Solve each equation.

48) $7 + a = 15$

49) $23 = d + 44$

50) $28 = n - 14$

51) $t - 22 = -31$

52) $42 = -14x$

53) $144 = 18a$

54) $\frac{n}{3} = 7$

55) $-6 = \frac{t}{9}$

56) $3m + 5 = 14$

57) $-2k + 7 = -3$

58) $11 = \frac{1}{3}a + 2$

59) $-15 = -7$

60) A cell phone company charges $45 a month for service and $0.12 extra for each text message. Mrs. Sowatsky was charged $49.32 last month. Write and solve an equation to find the number of text messages she sent.

Translate each sentence into an equation.

61) One more than three times a number is 7.

62) Seven less than twice a number is -1.

63) The quotient of a number and 5, less 10, is 3.

64) The perimeter of a rectangle is 40 inches. The width is 8 inches shorter than the length. Find the dimensions of the rectangle.

In addition: study vocabulary, use quizlet

Ch 4 topics:

- solve 2step equations/inequalities
- solve multistep equations/inequalities
- combine like terms
- parts of expressions (terms, like terms, coefficients, constants)
- look at quizzes