

You have the full class period to complete this exam. Please **show all of your work** on the test paper next to the related problem. Be sure to **include units of measure** in answers to application problems. **Circle your answers** whenever possible. Do not round answers unless instructed to do so. No calculators or notes are allowed. Please use a pencil, not a pen. Now just relax and show me what you have learned. Good luck!

For numbers 1-6, perform the indicated calculation. If your answer is a fraction, be sure it is in simplest form. [14 pts]

1. $7 + (-8) - (-2) = 1$

2. $\frac{5}{24} + \frac{3}{8} - \frac{1}{3} = \frac{1}{4}$

3. $-2.41 - 3.6 = -6.01$

4. $-6^2 = -36$

5. $4\frac{1}{2} \div 3\frac{3}{8} = \frac{4}{3}$

6. $0.523 \div 0.02 = 26.15$

7. Rachel walks $3\frac{1}{2}$ miles to school. Her brother offers to drive her $\frac{3}{5}$ of the way there. How many miles does he drive her? (Remember to answer with a mixed number rather than an improper fraction, if necessary.) [4 pts]

$$2\frac{1}{10} \text{ miles}$$

8. An elementary school needs to spend \$36,472 on a new computer system. The school has 433 students. **Estimate** the cost per student of the new computer system. (Round each number until there is only one nonzero digit before calculating.) [4 pts]

About \$100 per student

9. What percent of 180 is 54? [3 pts]

30%

10. A salesperson makes a base salary of \$20,000 per year. In addition, she earns a commission of 12% on all her sales. If she made \$80,000 in sales last year, what was her TOTAL salary last year? [4 pts]

\$29,600

11. Convert 70 kilograms to pounds. Use the fact that 1 kg = 2.2 lbs. [3 pts]

154 lbs

For numbers 12 and 13, use the order of operations to simplify each expression as much as possible. [7 pts]

12. $11 - 4(3^2) \div (-6) = 17$

13. $\left(\frac{3}{4}\right)\left(\frac{4}{9}\right) - \frac{2}{3} \div 4 = \frac{1}{6}$

For numbers 14-16, simplify each algebraic expression as much as possible. [7 pts]

14. $-4(2a - 3b) = -8a + 12b$

15. $\frac{2}{3}y - \frac{3}{4}x^2 - \frac{1}{3}y + \frac{7}{8}x^2 = \frac{1}{3}y + \frac{1}{8}x^2$

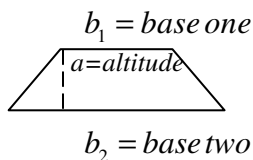
16. $6x(2x + 1) - (x^2 + 5x) = 11x^2 + x$

17. Evaluate $-3x^2 - 2x$ for $x = -3$. [3 pts]

-21

18. A piece of cloth is in the shape of a trapezoid. The altitude is 4 inches. One base measures 9 inches, and the other base measures 5 inches. What is the area of the cloth? [3 pts]

Use the following formula for the area of a trapezoid:



$$\text{Area} = \frac{1}{2}a(b_1 + b_2)$$

28 in^2