Unit 1 Test

Order of Operations

1. $8^2 + 6(14 - 12)$
2. $5(13 - 8) - 3 \bullet 7 + 3$
3. $(19 - 7) \div 4 + 11$
4. $(3 + 4)2 - 32$
5. $3(12 - 5) + 8 \bullet 4$

Distributive Property and Combining Like Terms

1. $3(-7 - 8n)$
2. $-2x - 8 - 7x + 2$
3. $-2 + 5(4 + 3r)$
4. $-5(8v - 2)$
5. $-3(5 + 2x) - 7$

Integers

1. $(-6) + (-1)$
2. $(-6) - 3$
3. $(-4) - (-5)$
4. $(4)(-7)(8)(-5)$
5. $-20 \div -5$

1.1 Identifying Factors, Terms, Coefficients

1. What is the constant in the expression $14c^2 + 7c - 6$?

   a. 6
   b. –6
   c. 2
   d. 14

2. Suppose you earn $20 per hour working part time at a tax office. You want to earn at least $1,800 this month, before taxes. How many hours must you work?

b. terms: $6t$ and 10, coefficient: 6, constant: 10
c. terms: $6t$ and 16, coefficient: 16, constant: 6
d. term: $6t$, coefficient: 16, constant: none

Write an algebraic expression to describe each situation, then identify the terms, coefficients, constants, and factors:

3. Andre purchased 10 cans of tennis balls from an online store and received a 25% discount. Shipping cost $5.99. Write an algebraic expression to represent the total cost of the tennis balls with the shipping cost, if x represents the cost of each can.

4. Nadia and some friends went to a movie. Their total cost was $30.24, which included taxes of $2.24. Write an algebraic expression to represent the price of each movie ticket, not including taxes. Let x represent the number of Nadia's friends that went to the movies.

5. Identify the terms, coefficients, constants, and factors: $21x^2 + 3x - 15x^2 + 9$

1.3/1.7 and 1.4/1.6- Creating and Solving Equations and Inequalities

1. It costs Raquel $5 in tolls to drive to work and back each day, plus she uses 3 gallons of gas. It costs her a total of $15.50 to drive to work and back each day. How much per gallon is Raquel paying for her gas? How do you know?

2. Hayden bought 4 tickets to a football game. He paid a 5% service charge for buying them from a broker. His total cost was $105.00. What was the price of each ticket, not including the service charge?

3. Driving to your friend's house, you travel at an average rate of 35 miles per hour. On your way home, you travel at an average rate of 40 miles per hour. If the round trip took you 45 minutes, how far is it from your house to your friend's house?

4. Claire purchases DVDs from an online entertainment store. Each DVD that she orders costs $15 and shipping for her order is $10. Claire can spend no more than $100. How many DVDs can Claire purchase?

5. Suppose you earn $15 per hour working part time as a carpenter. This month, you want to earn at least $950. How many hours must you work?

6. Camilla is saving to purchase a new pair of bowling shoes that will cost at least $39. She has already saved $19. What is the least amount of money she needs to save for the shoes?

7. Mina bought a plane ticket to New York City and used a coupon for 10% off the ticket price. The total cost of her ticket, with the discount, was $253.10. Which equation could she use to find the price of the ticket without the discount?

a. $z = 253.10 + 0.10$
b. $0.10z = 253.10$
c. $z + 0.10(z) = 253.10$
d. $z - 0.10(z) = 253.10$

8. Lucas bought an oven. His total cost of $1,249 included sales tax at the rate of 9% and an additional, untaxed delivery charge of $50. How much sales tax did he pay?

a. $99
b. $63
c. $109
d. $110

9. A refrigerator that costs R dollars with 7% sales tax can be described using the expression $R + 0.07R$. Which expression below is NOT the same as this expression?

a. $1.7R$
b. $1.07R$
c. $R(1 + 0.07)$
d. $0.07R + R$

10. What is the solution to the equation $-9x - 4 + 7x = 4 - 6x$?

a. $x = 2$
b. $x = -2$
c. There are no solutions to this equation.
d. $x = \frac{1}{2}$

1.8

1. Solve for y. $10x - 77 = 7y$

2. The formula for calculating the volume of a cone is $V = \frac{1}{3}\pi r^2 h$. Solve this formula for h.

   a. $h = 3V - \pi r^2$

   b. $h = \pi r^2 - 3V$

   c. $h = \frac{\pi r^2}{3V}$

   d. $h = \frac{3V}{\pi r^2}$

3. To convert degrees Celsius to Kelvin, the formula $K = C + 273.15$ is used. Solve this formula for C.

4. The formula $V = lwh$ is used to calculate the volume of a prism. Solve this formula for w.

5. The formula $C = 2\pi r$ is used to calculate the circumference of a circle. Solve this formula for r.