

## Indicators

### Objective:

**5.02 Translate among different representations of algebraic expressions, equations and inequalities.**

Vocabulary and Resources		
term	exponents	parentheses
like terms	rules of exponents	brackets
combining like terms	multiplicative identity	braces
simplify	additive identity	Students need to be familiar
factor	multiplicative inverse	with a variety of notations for
equivalent expressions	additive inverse	multiplication: $a \times b$
coefficient	grouping symbols	$a \cdot b$
variable	order of operations	$a(b)$

**A.** The Jones family is investing money in stocks to help with college expenses for their children. They plan on purchasing Mutts stock and Paws stock and want to invest a maximum of \$1,200. If they purchase  $x$  shares of Mutts stock at \$20 per share and  $y$  shares of Paws stock at \$40 per share, write an inequality to describe this situation, make a graph of the inequality, and give five different possibilities for their investment.

Shares of Mutts ( $x$ )	Shares of Paws ( $y$ )	Total Investment

**B.** The selling price of a car, \$18,560, was determined by calculating an 8% markup from the dealer's cost. Write the algebraic equation that describes the situation. What did the dealer pay for the car?

**C.** The local bookstore is having a one-day sale on all children's books. Jane decides she will spend at least \$25.00 but no more than \$40.00 on books. If all sale books are priced at \$3.75, write an inequality that expresses the number of books,  $b$ , that she can purchase.

**D.** Simplify each of the following:

a.  $8x - 12y - 15x + 3y$

b.  $10y \div 2 \cdot (-6) + 4y$

c.  $6xy \cdot 3 \div (-9) - 1$

d.  $3ab - 10(2a - 4) + 32ab \div 2^4$

e.  $-3xy + 10 \cdot 2xy - 4 - 32xy \div (-2)^4$

**E.** Janine has a cell-phone and the monthly plan she has charges \$39.99 for the first 400 minutes and \$0.42 for each additional minute. Her bill last month was \$93.33 before taxes and surcharges were added. Write an equation that can be used to calculate the number of minutes,  $m$ , that she used the cell-phone last month. Solve this equation showing all the steps in your solution. How many minutes did she use the cell phone last month?