

## Indicators

### Objective:

**1.07 Develop flexibility in solving problems by selecting strategies and using mental computation, estimation, calculators or computers, and paper and pencil.**

Vocabulary and Resources		
guess and test	make an organized list	find a pattern
make a table/chart/graph	solve a simpler problem	work backwards
make a diagram/picture	extraneous information	

**A.** The gasoline gauge of John's car was on empty when he filled the gasoline tank of his car. The price of the gasoline was about \$1.53 per gallon. If he paid \$32.65 for the gasoline, about how many gallons must his tank hold?

**B.** Two runners start running at the same time from the start/finish line of a 400-meter oval track. One runner runs laps of 1 minute 15 seconds and the other runs laps of 1 minute 45 seconds. How long will it be before the runners cross the start/finish line at the same time? How many laps will each have run? Explain your answer.

(From SREB publication *Getting Students Ready for Algebra I: What Middle Grades Students Need to Know and Be Able to Do*)

**C.** Of the 90 people in a room, two-thirds are men and three-fifths of the people have brown hair. What is the least number of men in the room who could have brown hair?

(Adapted from SREB publication *Getting Students Ready for Algebra I: What Middle Grades Students Need to Know and Be Able to Do*)

**D.** Tate has two dogs, Tucker and Britney. Britney consumes 0.75 of a can of dog food each day and Tucker consumes 1.5 cans of dog food each day. The price for dog food this week is 3 cans for \$2.00. How much will it cost Tate for a 20-day supply of dog food for his two dogs?

**E.** Kim has a recipe for 36 cupcakes that requires 5 cups of flour, 3 eggs, and 2 cups of sugar. If she wants to make 24 cupcakes, how much of each of these ingredients will she need? How much of each ingredient will she need for 54 cupcakes?

**F.** Place a row of 100 pennies all heads up. Now turn every second penny heads down. Next, change the position of every third penny (if it is heads up, make it heads down; if it is heads down, make it heads up). Now change the position of every penny that is a multiple of four. Next change the position of every penny that is a multiple of five. If you continue this pattern with multiples of 6, 7, 8, ..., which pennies would be heads up?