Topics Covered

✓ **Percents** ✓ **Rates** ✓ **Probability**

Teaching Tip: *This week will focus on word problem strategies consisting of the topics mentioned above. Some tips on these topics are provided. The tips are meant to be used as an aid to jog the students' memory. They are not meant to be taught. The example sheet is formatted like an index. Work all the practice problems with the students showing work as needed. The "show your work" space is great for writing down the relevant information from the problem and showing computations.*

***Strategy:* A great habit to get into when solving word problems is to begin the problem by writing down all the relevant information and data. Sometimes word problems can seem overwhelming or really complicated, but by using this strategy, students can simply focus on the relevant information and figure out what the question is actually asking.**

Note: Point values : **1)** **Questions with "Show your work" are 1/2 point each.**
2) **When asked, in questions with Parts (A, B, etc.), "Show your work" is worth 1 point.**

Read the directions for each problem carefully. The number of points will vary by question. Write your answers in the box where it is provided. In others, make sure you fill the bubbles correctly.

Correctly filled bubbles: correct incorrect incorrect

Practice 1A: William has a bag of marbles. He has 4 blue marbles, 6 red marbles, 5 green marbles, 2 yellow marbles, 1 white marble, and 3 black marbles. If William draws one marble from the bag, what is the probability that the marble he drew was black?

Probability is_____

Practice 1B: Show your work.

***Tip*:** The **probability** of an event x, denoted P(x), is the likelihood that it will occur. It is given as

$$P(x) = \frac{\#\text{ of successes}}{\#\text{of possible outcomes}}$$

In general, we will express a probability as a fraction, but we could also express the value as a decimal or a percentage.

$$0 \leq P(x) \leq 1$$

If a probability is equal to 0, then the event is not possible. If a probability is equal to 1, then the event is certain.

***Strategy:* Students can also write down formulas or things they remember about the topic that they think might be relevant to the problem. This will jog their memories about what strategy needs to be used in the problem.**

Virgil is doing magic tricks with a standard deck of playing cards that contains numbers 2-10, J, Q, K, and A of 4 different suites.

Part A

Practice 2-3: What is the probability that when drawing one card Virgil draws a queen (Q)? Show your work.

Part B

Practice 4-5: What is the probability that Virgil draws two aces in a row without replacement? Show your work.

Strategy: ***With consecutive events, watch out for words that indicate whether or not there is replacement (such as saying "the card was put back after each draw"). This will change the process of finding the probability.***

Example: What are the chances of pulling 2 kings (K) in a row?

With replacement: $\frac{4}{52} \bullet \frac{4}{52}$

Without replacement: $\frac{4}{52} \bullet \frac{3}{51}$

Practice 6A: Each of the letters in the word MATHWIZARD are on separate cards, face down on the table. If you pick a card at random, what is the probability that its letter will be A or Z?

Practice 6B: Show your work.

Practice 7A: You think of a number from the first twenty integers (1 - 20). What is the probability that the integer chosen will be divisible by 4?

Practice 7B: Show your work.