

7th Grade Math Session

10/25/11



OUR GOALS FOR TODAY ARE TO:

**TO LEARN AND SHARE STRATEGIES FOR
STANDARDS THAT ARE TAUGHT DURING
THE 2ND AND 3RD QUARTERS.**

Bell Work



- You were given a question from the Item sample.
- Find the section(s) in your textbook where the standard is addressed.
- Determine if you feel the textbook has practice questions and examples that “look like” the sample question.

Standards



- Look at your 2nd and 3rd quarter standards and choose the 3 standards in which you feel your students have the most difficulty.
- On the posters on the wall, place an x next to the 3 standards that you chose.

“Good” Questions



“When we ask good questions in math class, we invite our students to think, to understand, and to share a mathematical journey with their classmates and teachers alike.”

What are Good Questions?



- They help students ***make sense*** of mathematics.
- They are ***open-ended***, whether in answer or approach. There may be multiple answers or multiple approaches.
- They empower students to ***unravel their misconceptions***.
- They not only require the ***application of facts and procedures*** but encourage students to ***make connections and generalizations***.

What are Good Questions?



- They are ***accessible to all students*** in their language and offer an entry point for all students.
- Their answers ***lead students to wonder more about a topic*** and to perhaps construct new questions themselves as they investigate this newly found interest.

SPI 0706.2.7



Use ratios and proportions to solve problems.

Item Sample Question:

The price for 8 rolls of paper towels is \$5.36. Which of the following represents the same price per roll?

GSP Sketch

SPI 0606.2.6



Using Singapore Math

Hot dogs, hamburgers and french fries are being sold at a rate of 3:5:4. 45 hot dogs are sold. Tell how many hamburgers and french fries are sold.

Hotdogs:

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 = 45

Hamburgers:

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French Fries:

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SPI 0706.1.1



Use proportional reasoning to solve mixture/concentration problems.

Item Sample Question:

A recipe for making 4 cups of soup requires 3 cups of water. At this rate, how many cups of water are required to make 24 cups of soup?

SPI 0706.1.1



Use proportional reasoning to solve mixture/concentration problems.

A 32-gram serving of Cinnamon Life contains 9 grams of sugar. A 55-gram serving of Raisin Nut Bran contains 16 grams of sugar. (Both are $\frac{3}{4}$ cup servings.) Which cereal has less sugar per gram of cereal?

SPI 0706.1.1



Use proportional reasoning to solve mixture/concentration problems.

Use the information in Column A to help you complete the other columns.

	A	B	C	D
Sugar	16 oz.	32 oz.	?	14 oz.
Flour	4 oz.	?	7 oz.	?

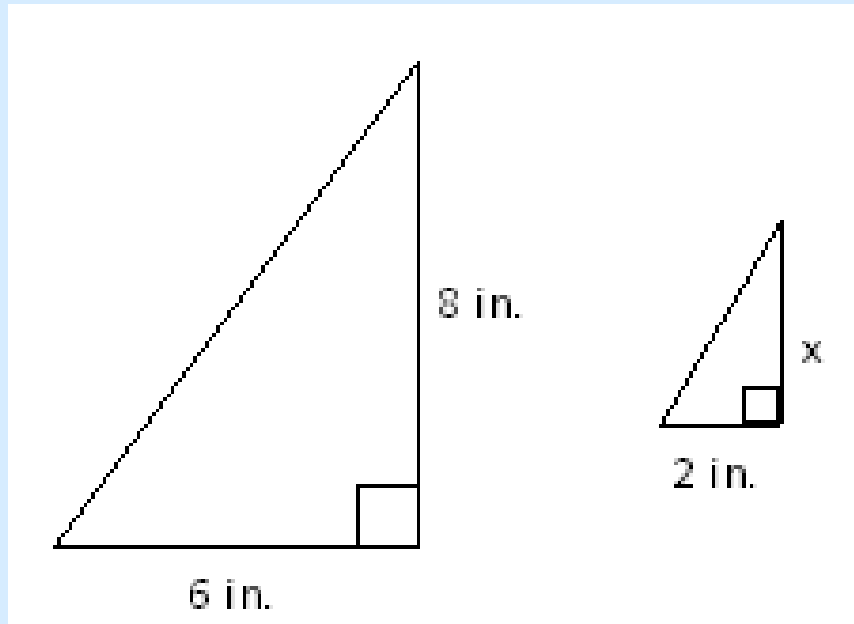
SPI 0706.4.1



Solve contextual problems involving similar triangles.

Item Sample Question:

The two similar triangles shown are patterns used to create a design on a jacket. What is the value of x , the height of the smaller triangle, in inches?



SPI 0706.4.2



Use SSS, SAS, and AA to determine if two triangles are similar.

Item Sample Question:

A triangle has side lengths of 15 inches, 33 inches, and 42 inches. Which list shows the side lengths of a similar triangle?

SPI 0706.1.4



Use scales to read maps.

Item Sample Question:

The scale drawing shows the location of Washington, D.C., and the capitals of several nearby states. According to the scale drawing, which city is approximately 250 miles from Richmond?



SPI 0706.2.6



Express the ratio between two quantities as a percent and a percent as a ratio or fraction.

Item Sample Question:

Mr. Smith asked his students whether they prefer to go to a museum or the zoo for a field trip. He found that 35% of the students prefer to go to a museum, 45% prefer to go to the zoo, and the rest have no preference. What is the ratio of students who have no preference to the students who prefer to go to the museum?

Discussing Answers



- Why do you think that?
- How did you know to try that strategy?
- How do you know you have an answer?
- Will this work with every number? Every similar situation?
- When will this strategy not work? Can you give a counterexample?
- Who has a different strategy?
- How is your answer like or different from another student's?
- Can you repeat your classmate's ideas in your own words?
- Do you agree or disagree with your classmates idea?

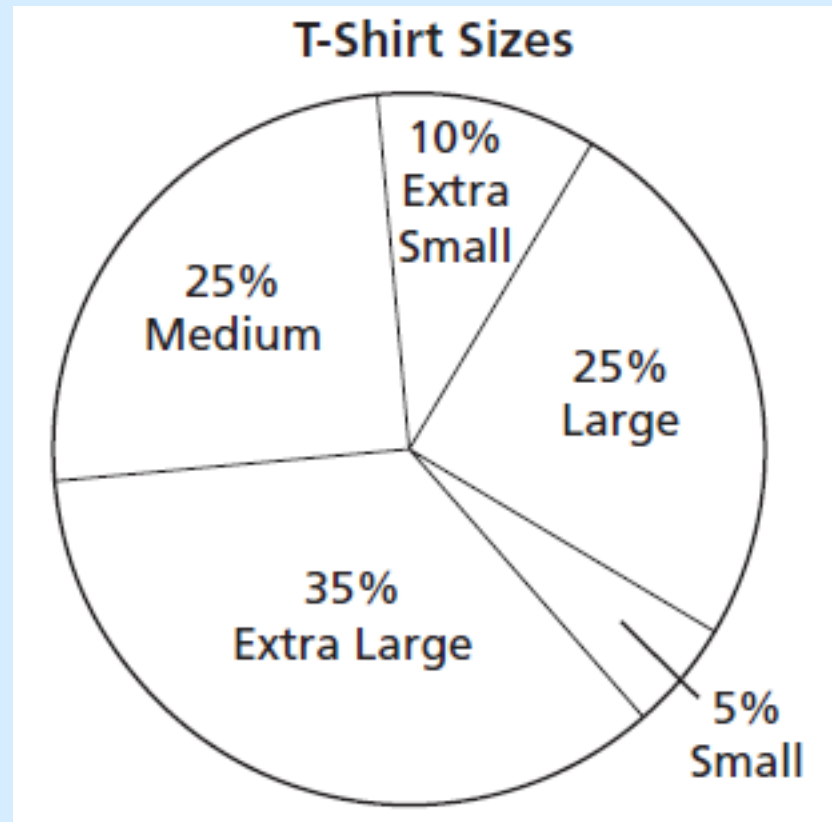
SPI 0706.5.1



Interpret and employ various graphs and charts to represent data.

Item Sample Question:

A clothing company sold a total of 23,000 T-shirts last year. The circle graph shows the sizes of the T-shirts sold. What is the total number of medium-sized T-shirts sold by the clothing company last year?



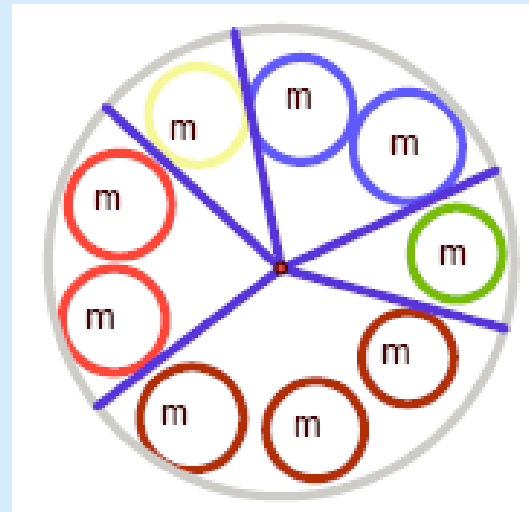
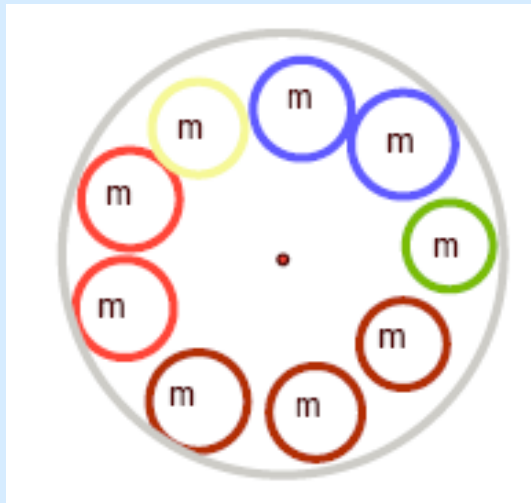
M&M Circle Graph



Arrange the M&Ms from a small package in a circle on a small paper plate.

Draw lines from center to edge dividing the colors.

Label the sections with fraction, decimal, and percent.



SPI 0706.5.3



Calculate and interpret the mean, median, upper-quartile, lower-quartile, and interquartile range of a set of data.

Item Sample Question:

What is the upper quartile of the numbers listed below?

6, 47, 54, 15, 42, 41, 7, 39, 36, 41, 43

Quartile Strips



- List the numbers from least to greatest in the strips.
- 6, 47, 54, 15, 42, 41, 7, 39, 36, 41, 43

6	7	15	36	39	41	41	42	43	47	54	
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- Cut off the extra squares.

6	7	15	36	39	41	41	42	43	47	54
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- Fold in half to get the median.
- Fold these halves again to get the quartiles.

SPI 0706.5.2



Select suitable graph types (such as bar graphs, histograms, line graphs, circle graphs, box-and-whisker plots, and stem-and-leaf plots) and use them to create accurate representations of given data.

Item Sample Question:

The test scores of several students are listed below.

70, 80, 75, 85, 80, 90, 65, 90, 70, 100

Which box-and-whisker plot accurately represents these data?

Human Box and Whiskers



Convert your height to cm (2.54 cm = 1 in.)

Line up from shortest to tallest, using sheets of paper to mark any missing heights.

SPI 0706.4.3



Apply scale factor to solve problems involving area and volume.

Item Sample Question:

Two squares are similar. The area of the smaller square is 12 square inches. The area of the larger square is 768 square inches. What is the ratio of the side length of the smaller square to the side length of the larger square?

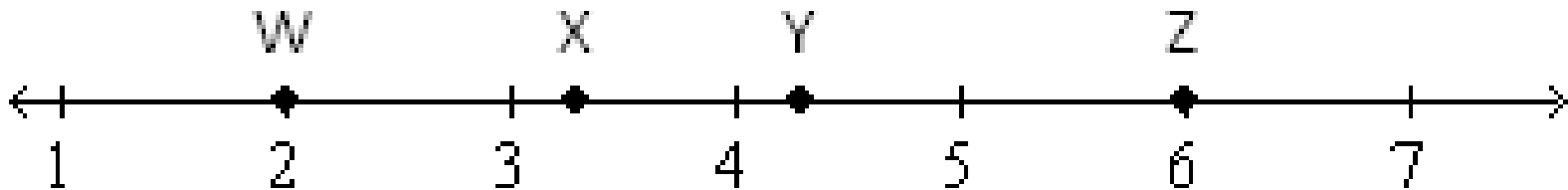
SPI 0706.2.4



Determine the approximate location of square/cube roots on a number line.

Item Sample Question:

Which point best represents the location of cube root 36 on the number line?



SPI 0706.2.3



Use rational numbers and roots of perfect squares/cubes to solve contextual problems.

Item Sample Question:

David designed a pattern in the shape of a square. The area of this pattern is shown below. What is the perimeter of the pattern?

$$A = 30 \frac{1}{4} \text{ in}^2$$

SPI 0706.5.4



Use theoretical probability to make predictions.

Item Sample Question:

Each letter of the following name is written on a different card, and the cards are placed in a bag.

M U R F R E E S B O R O

One card is randomly selected from the bag. What is the probability that the selected card shows the letter R?

SPI 0706.3.8



Solve contextual problems involving two-step linear equations.

Item Sample Question:

Carolyn spent \$40.00 to purchase 1 adult ticket and 5 child tickets for a movie. The price of the adult ticket was \$7.50. The following equation can be used to find p , *the price of each* child ticket.

$$5p + 7.5 = 40$$

What was the price of each child ticket?

SPI 0706.3.8



Maura is organizing a school fair. She is in charge of hiring vendors, choosing games and activities, and deciding on prices for admission, activities, and food. During a planning meeting with the fair committee, Maura wrote the equation $y = 2x + 5$. what might it be referring to?

SPI 0706.3.9



Solve linear inequalities in one variable with rational coefficients symbolically or graphically.

Item Sample Question:

Which of these represents the solution for the inequality $\frac{y + 3}{4} < 2$?