

Silver Spring International Middle School



Summer Math Packet

Resource: Smarter Balanced Assessment Consortium
Practice test Grade 7, 2013

Incoming Math 8

Dear Student and Parent,

The purpose of this packet is to provide a review of objectives that were taught the previous school year and provide tasks related to the Common Core curriculum. Reviewing these materials will help your child retain what he/she has learned this year and assist them as they enter the next course in the sequence of study.

An answer key can be accessed online our school website. This key can be used in one of the following ways:

- Have your child check his/her work after each assignment.
- Check your child's work after each assignment.
- Check the entire packet once it is finished.

Whichever way you choose to use the answer key, your child should be able to identify and corrects all mistakes. Students should NOT be using a calculator.

Completing the packet is completely voluntary, but **strongly recommended**.

Thank you for your cooperation,

The SSIMS Math Department

1.

A representative sample of 50 students from a high school is surveyed.

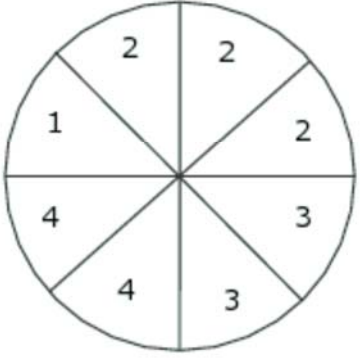
Each student is asked what science class he or she is taking.

The table shows the responses.

Science Class	Number of Students
Physics	6
Chemistry	10
Biology	18
Earth Science	4
Health Science	12

Based on the representative sample	True	False
Twice as many students are taking Health Science than are taking Physics.		
20% of students at the high school are taking Chemistry.		
In a group of 25 students, it is expected that 4 of the students are taking Earth Science.		
In a group of 150 students, it is expected that 18 of the students are taking Physics.		

2. This spinner has 8 equal-sized sections, each labeled 1, 2, 3, or 4. The arrow on the spinner is spun. Write the probability outcomes under the category that correctly describes them.

	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="padding: 5px;">Probability Less than $\frac{1}{3}$</th> <th style="padding: 5px;">Probability Greater than $\frac{1}{3}$</th> </tr> </thead> <tbody> <tr> <td style="height: 150px;"></td> <td style="height: 150px;"></td> </tr> </tbody> </table>	Probability Less than $\frac{1}{3}$	Probability Greater than $\frac{1}{3}$		
Probability Less than $\frac{1}{3}$	Probability Greater than $\frac{1}{3}$				
Landing on a 1	Landing on a 2				
Landing on a 3	Landing on a 4				

3. George's weekly pay rate is \$455 per week. He receives a 20% raise.

How can George calculate his new weekly wage rate?

Write each calculation under the category that correctly describes whether the calculation on its own can find George's new weekly pay rate.

Finds new wage rate	Does not find new wage rate

Divide \$455 by 0.20	Multiply \$455 by 0.20	Solve for x: $\frac{x}{455} = \frac{120}{100}$	Solve for x: $\frac{455}{x} = \frac{20}{100}$
Divide \$455 by 1.20	Multiply \$455 by 1.20		

4. Consider the equation.

Identify two expressions that are equivalent to w and write them in the answer boxes.

$$3(4v + 1) - 3(2v + 3) = 2(v - 7) + w$$

$$w = \boxed{} = \boxed{}$$

$4v + 8$	$-v + 9$	$8v - 20$	$6(v - 1)$	$-1(v - 9)$
$4v - 28$	$6v - 6$	$4(v + 2)$	$4(v - 7)$	$4(2v - 5)$

5. An equation is shown.

$$a \bullet b = c$$

Given this equation, write one value in each box to complete four different equations. Assume a , b , and c are not 0.

a b c $-a$ $-b$ $-c$

$-a$	$\boxed{}$	$= c$
$\boxed{}$	$\boxed{}$	$= c$
	$\boxed{}$	
	\hline	
	$-b$	$= a$
	$\boxed{}$	
	\hline	
	$\boxed{}$	$= -a$

6. Alex claims that when $\frac{1}{4}$ is divided by a fraction, the result will always be greater than $\frac{1}{4}$.

- a. Write a digit in each box that creates an expression that supports Alex's claim.
- b. Write a digit in each box that creates an expression that contradicts Alex's claim. Use digits 1, 2, 3, 4, 5, 6, 7, 8, or 9.

A. Supports Alex's Claim

$$\frac{1}{4} \div \frac{\square}{\square}$$

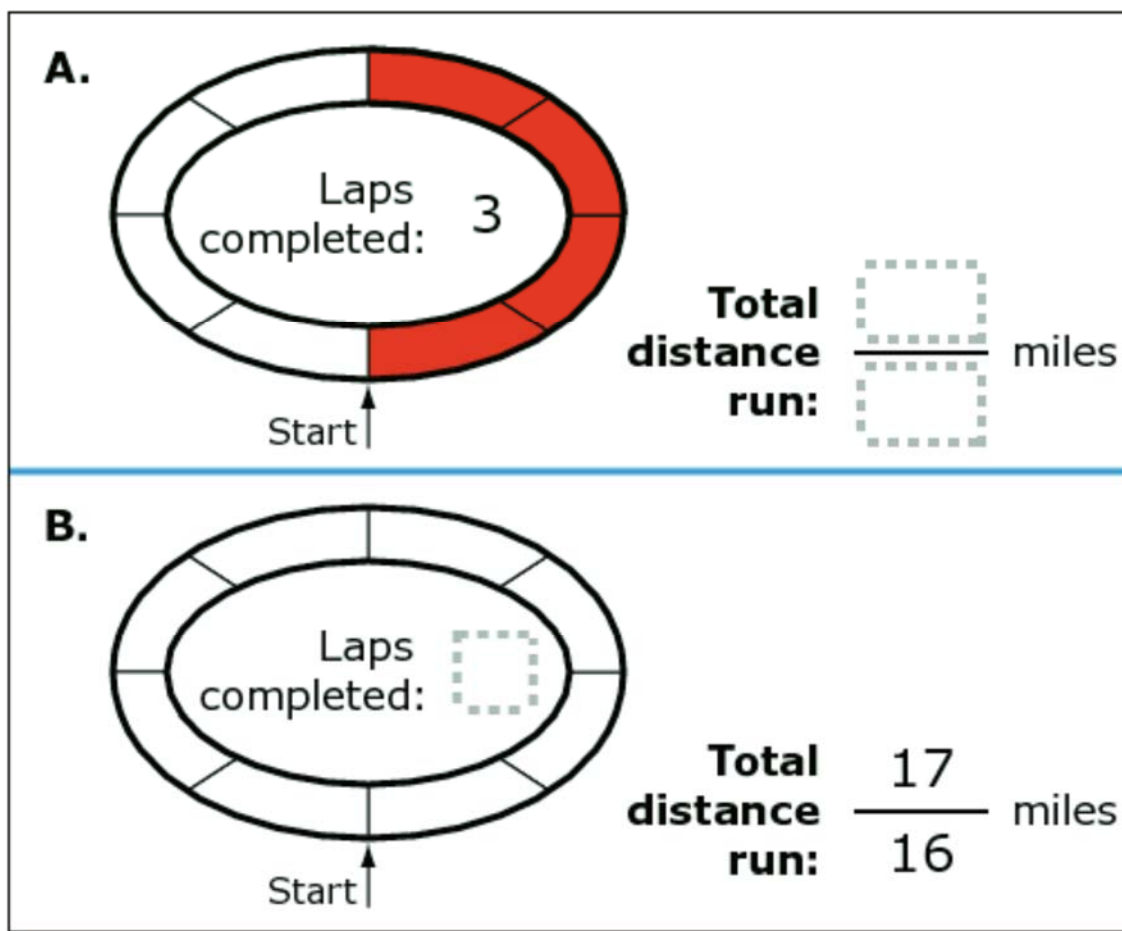
B. Contradicts Alex's Claim

$$\frac{1}{4} \div \frac{\square}{\square}$$

7. A treadmill counts each $\frac{1}{4}$ mile run as one lap. The display on the treadmill shows the total number of laps run and highlights the portion of the current lap that has been completed.

a. What is the total distance run for the display shown? Write a number (0-9) in each box.

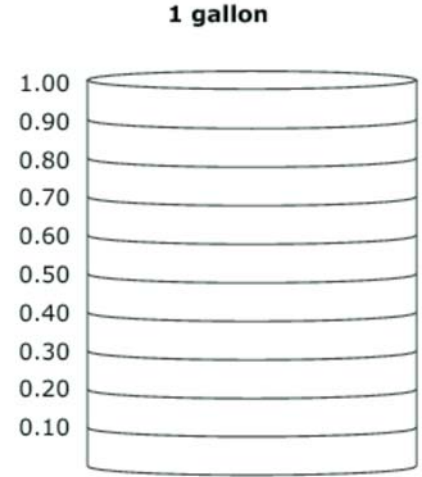
b. Create a display that shows a total of $\frac{17}{16}$ miles run.



8. Tim makes 80 gallons of paint by mixing 48 gallons of green paint with 32 gallons of blue paint.

What part of every gallon is from green paint?

The model represents 1 gallon of mixed paint.



How much of the gallon is from green paint?

9. Write an expression in each box to form three true equations.

$$-4 \boxed{} = -4x + 16$$

$$\frac{3}{4} \boxed{} = -3 + 3x$$

$$-0.113 \boxed{} = 0.452x + 0.452$$

$(x - 4)$	$(x + 4)$	$(-x + 4)$	$(4 - 4x)$
$(-4 + 4x)$	$(-4x - 4x)$	$(4x + 4)$	$(-4x - 4)$

10. Jerry needs 216 posts to build a fence. He has 88 posts and needs p more.

a.

Write numbers into the boxes and an operational symbol in the circle to create an equation to show how to solve for the number of posts Jerry needs.

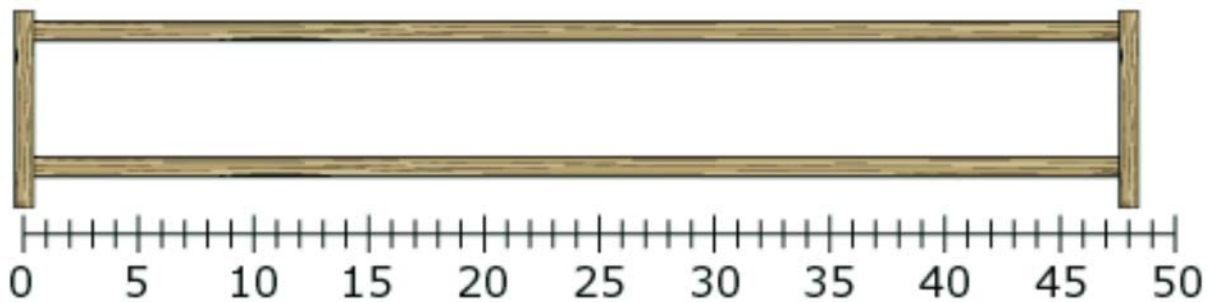

$$\boxed{} \circ \boxed{} = \boxed{}$$

b.

Each post requires 8 nails for installation. There are 250 nails in a box. How many boxes of nails will Jerry need?

c.

Jerry will build another fence that is 48 feet long. The posts can be a minimum of 5 feet apart and a maximum of 9 feet apart. The posts should be equally spaced. Mark the number line to design a fence that uses the fewest posts possible.



11.

A set contains the numbers 0, 5, 10, and 12. Two different numbers are selected randomly from this set.

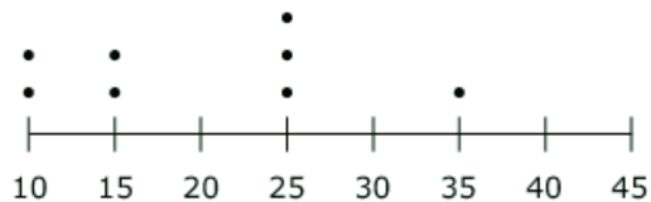
What is the probability that each of these events will occur?

$$P(\text{the sum is greater than 11}) =$$

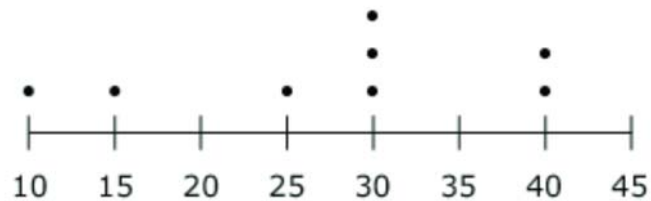
$$P(\text{The product is 0}) =$$

12. Mr. Axt trains a group of student athletes. He wants to know how they are improving in the number of push-ups they can do.

The dot plots show the number of push-ups each student was able to do last month and this month.



Number of Push-ups Last Month



Number of Push-ups This Month

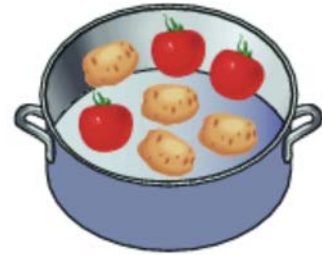
How much did the mean number of push-ups increase from last month to this month?

13. Scott's soup recipe for 4 servings has 3 carrots and 2 celery sticks.

a. How many of each will Scott need for 8 servings?

Paul's soup, pictured, has tomatoes and potatoes.

b. What is the ratio of tomatoes to potatoes?



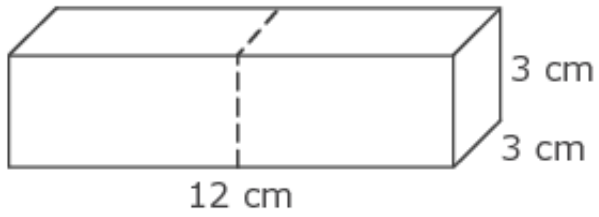
14. Aimee has \$10.00 to spend on school supplies. This table shows how much each item at the school store costs. No tax is charged.

Item	Price
Folder	\$1.29
Pen	\$0.70
Notebook	\$2.35
Eraser	\$0.89

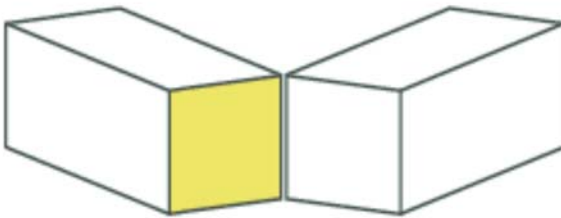
Select all of the following combinations Aimee could buy with her \$10.00.

- a. 5 folders and 5 pens
- b. 6 pens and 6 erasers
- c. 1 pen and 4 notebooks
- d. 3 folders and 7 erasers
- e. 4 folders and 2 notebooks
- f. 3 notebooks and 4 erasers

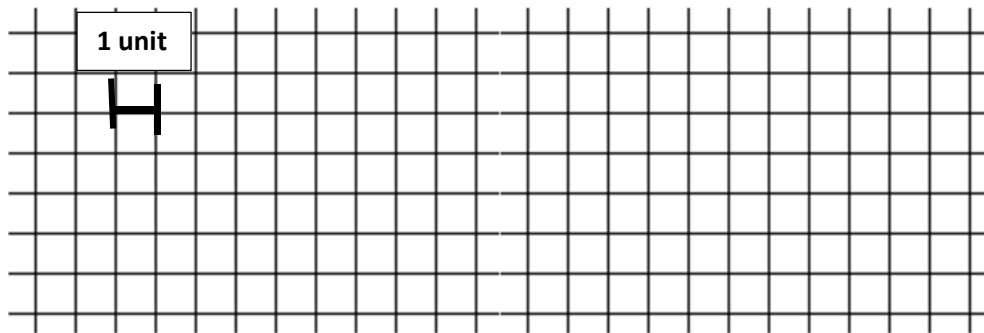
15. This stick of butter is shaped like a rectangular prism.



Carla cuts the stick along the dotted line to create two identical prisms:



Draw the shaded part of the stick.



16. Mike does not want to spend more than \$18.00 on a new collared shirt.

Select all of the following descriptions of prices for collared shirts that Mike would buy.

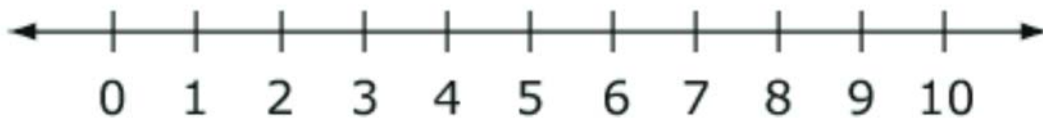
- a. 10% off \$19.00
- b. 15% off \$20.00
- c. 25% off \$28.00
- d. \$14.85, plus a \$3.25 shipping fee
- e. \$15.55, plus a \$2.40 shipping fee
- f. \$16.25, plus a \$1.90 shipping fee

17. You are buying two kinds of coffee.

- 1 pound of premium coffee costs \$3.00
- 1 pound of regular coffee costs \$2.00

You have \$15.00 to spend and want to buy 1 pound of premium coffee.

Graph a solution set that shows all possible numbers of pounds of regular coffee that you can buy.

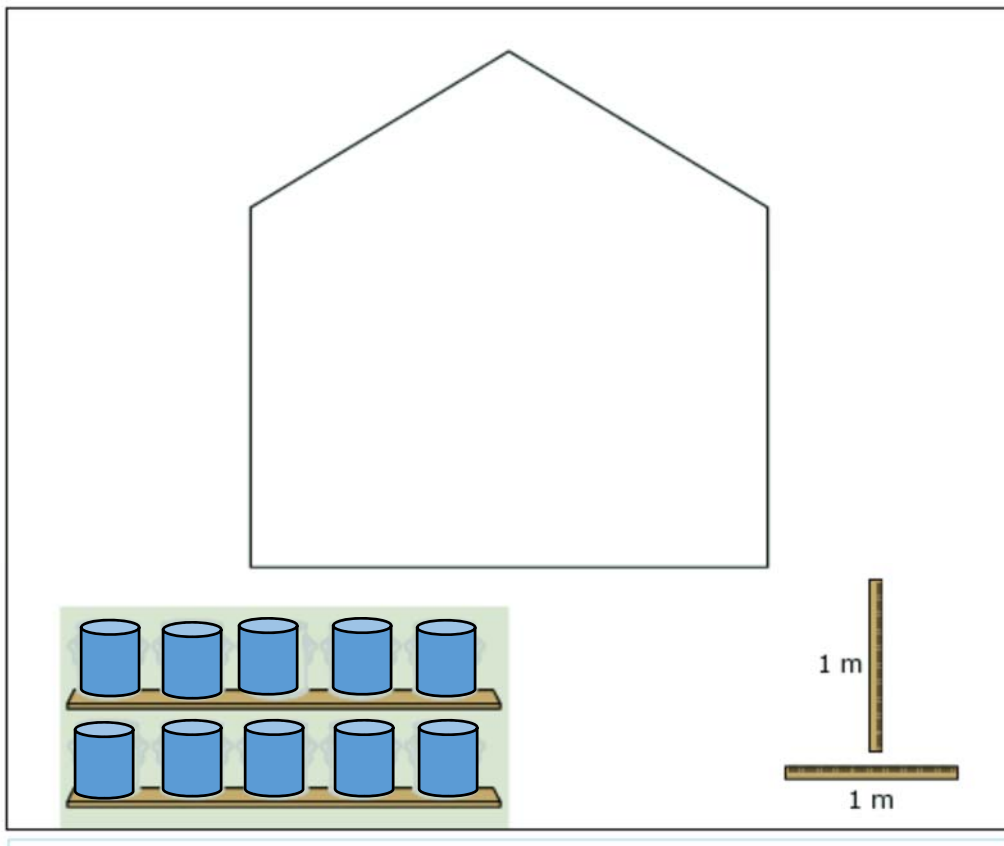


18. Peter owns a lawn-mowing service. For every 3 hours of lawn-mowing, Peter charges \$28.80. Write an equation that models the relationship between the total charge, y , and the number of hours, h , worked.

19. John needs to paint one wall in his house. He knows that 1 can of paint covers an area of 24 square feet. John uses a meter stick to measure the dimensions of the wall.

[1 meter is approximately 39 inches]

Select the least number of cans of paint John can use to paint the wall. You may use the meter sticks shown to estimate the dimensions of the wall.



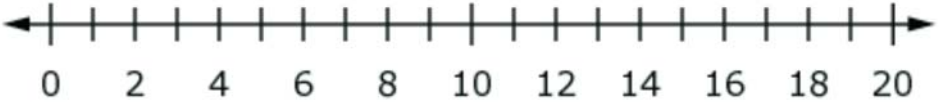
20. Shelly incorrectly solves the equation $\frac{1}{2}(c + 6) = 7$. Her work is shown.

a. Select all the steps that show an error **based on the equation in the previous step**.

b. Graph the correct solution of the given equation.

A.	$\frac{1}{2}(c + 6) = 7$
Step 1:	$\frac{1}{2}c + 6 = 7$
Step 2:	$\frac{1}{2}c = 7 + 6$
Step 3:	$\frac{1}{2}c = 13$
Step 4:	$c = 13 \div 2$
Step 5:	$c = 6\frac{1}{2}$

B. Correct solution



21. The entry fee to the fair is \$4.00. Each ride requires a ticket that costs \$0.50. Heidi spent a total of \$12.00. How many tickets did she buy?

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