

Name: _____

7th Grade Concept Review #2

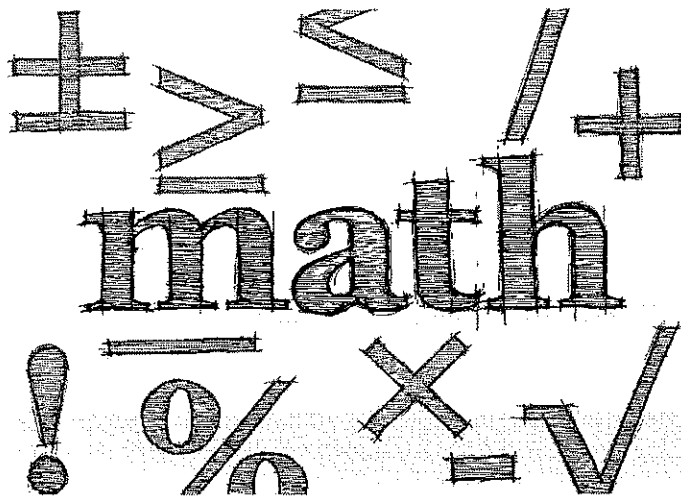
Note: Session 1 (#1-20) is
NO CALCULATOR!!!

All questions are worth 5 points.

3 points for the correct answer.
Please take your answer from the booklet and
put it in the second column.

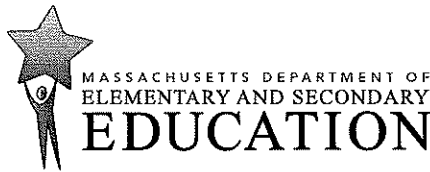
2 point on every problem for showing ALL work.
The two will be crossed-out if you did not earn
the point for showing all work.

This will count as a QUIZ grade!!!



Final Score _____ %

SESSION 1: NO CALCULATOR!		
Problem	Answer	Work
1		2
2		2
3		2
6		2
9		2
12A	(see paper)	2
12B		2
12C		2
12D		2
13		2
16		2
19		2
20		2
SESSION 2: CALCULATOR		
Problem	Answer	Work
21		2
22		2
23		2
24		2
25A		2
25B		2
25C		2
26		2
27		2
30		2
31		2
37		2
40		2
Total		



Massachusetts Comprehensive Assessment System Grade 7 Mathematics Reference Sheet

CONVERSIONS

1 cup = 8 fluid ounces

1 pint = 2 cups

1 quart = 2 pints

1 gallon = 4 quarts

1 gallon \approx 3.785 liters

1 liter \approx 0.264 gallon

1 liter = 1000 cubic centimeters

1 inch = 2.54 centimeters

1 meter \approx 39.37 inches

1 mile = 5280 feet

1 mile = 1760 yards

1 mile \approx 1.609 kilometers

1 kilometer \approx 0.62 mile

1 pound = 16 ounces

1 pound \approx 0.454 kilogram

1 kilogram \approx 2.2 pounds

1 ton = 2000 pounds

AREA (A) FORMULAS

square $A = s^2$

rectangle $A = bh$

OR

$$A = lw$$

parallelogram . . $A = bh$

triangle $A = \frac{1}{2}bh$

trapezoid $A = \frac{1}{2}h(b_1 + b_2)$

circle $A = \pi r^2$

VOLUME (V) FORMULAS

cube $V = s^3$

(s = length of an edge)

right prism $V = Bh$

TOTAL SURFACE AREA (SA) FORMULAS

right rectangular prism . . $SA = 2(lw) + 2(hw) + 2(lh)$

CIRCLE FORMULAS

area $A = \pi r^2$

circumference . . $C = 2\pi r$

OR

$$C = \pi d$$

- 1** Charles bought a box of fruit that contained only oranges and tangerines.
- There were 5 oranges for every 3 tangerines in the box.
 - There were 20 oranges in the box.

Which of the following proportions can be used to find x , the number of tangerines in the box?

A. $\frac{5}{8} = \frac{x}{20}$

B. $\frac{5}{8} = \frac{20}{x}$

C. $\frac{5}{3} = \frac{x}{20}$

D. $\frac{5}{3} = \frac{20}{x}$

- 2 What is the value of this expression?

$$6 + (-9) - (-4)$$

- A. -11
- B. -7
- C. 1
- D. 19

- 3 Brayden adds $\frac{1}{3}$ cup of flour into a mixture every $\frac{1}{2}$ minute. What is the rate, in cups per minute, at which Brayden adds flour to the mixture?

- A. $\frac{1}{6}$
- B. $\frac{1}{5}$
- C. $\frac{2}{3}$
- D. $\frac{3}{2}$

- 6 A carton of pens contains 4 blue pens, 3 red pens, 10 black pens, and 1 green pen. All the pens are the same size and shape. Harry will select a pen at random.

Which of the following best describes the probability that Harry will select a green pen?

- A. likely
 - B. certain
 - C. unlikely
 - D. impossible
- 9 Emma noticed that the new admission fee for the zoo is 50% more than last year's fee. She wrote this expression to represent the new admission fee, where f represents last year's fee.

$$f + (0.50 \times f)$$

Which of the following expressions shows another way Emma could have represented the new admission fee?

- A. $1.5f$
- B. $150f$
- C. $f + 1.5$
- D. $f + 150$

This question has four parts.

- 12** Gloria has two number cubes with faces numbered 1 through 6. She will roll each number cube once.

Part A

Make an organized list to show the sample space for rolling the two number cubes once.

Enter your organized list in the space provided.

Part B

How many possible outcomes are in the sample space for rolling the two number cubes once?

Enter your answer in the space provided.

Part C

Gloria wants to roll the number cubes once and get a sum of 8 on the top faces.

List the outcomes in the sample space that have a sum of 8.

Enter your list in the space provided.

Part D

What is the probability that Gloria will get a sum of 8 on the top faces when she rolls the two number cubes once?

Enter your answer in the space provided.

- 13** The first number in a pattern is 8. Each following number is found by subtracting 9 from the previous number.

What is the fifth number in the pattern?

- A. -45
 - B. -40
 - C. -37
 - D. -28
- 16** What is the value of this expression?

$$12 \div 0.48$$

- A. 4
- B. 25
- C. 0.04
- D. 0.25

- 19** Ava and Jiao each swam a two-lap swimming race. Ava took 31.49 seconds to finish her first lap and 30.03 seconds to finish her second lap. Jiao finished her two-lap swimming race 1.76 seconds faster than Ava.

What was Jiao's total swimming time, in seconds, after she finished her two-lap race?

- 20** Which of the following is equivalent to this expression?

$$40 \div \frac{1}{4}$$

- A. $\frac{1}{4} \cdot 40$
B. $40 \cdot 4$
C. $\frac{1}{4} \div 40$
D. $40 \div 4$

- 21** The computer teacher at a middle school spent \$12,950 to buy a storage cart and 25 laptop computers. The total purchase is represented by this equation, where c stands for the cost of each laptop computer purchased.

$$25c + 450 = 12,950$$

What was the cost of each laptop computer that the teacher purchased?

- A. \$536
- B. \$518
- C. \$500
- D. \$475

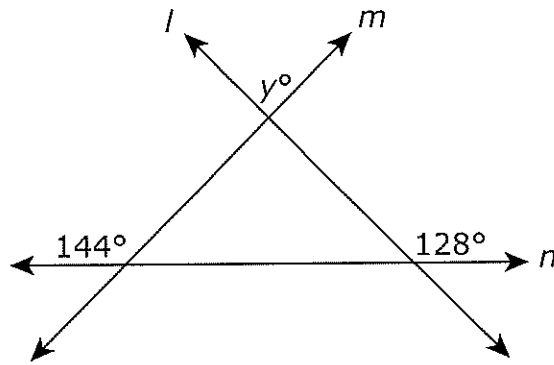
22 The label on Adriana's carton of juice has this information listed.

- One serving size equals $\frac{1}{2}$ cup.
- Each serving has 30% of the recommended daily amount of vitamin C.

Yesterday, Adriana drank $2\frac{1}{4}$ cups of juice. What percent of the recommended daily amount of vitamin C was in the juice Adriana drank yesterday?

- A. 33.75%
- B. 67.5%
- C. 120%
- D. 135%

- 23 Lines l , m , and n intersect each other, as shown in this diagram.



Based on the angle measures in the diagram, what is the value of y ?

- A. 36
- B. 52
- C. 88
- D. 92

- 24 This table shows the numbers of students in different age groups who participate and do not participate in sports in one school district, as well as the total number of students in each age group.

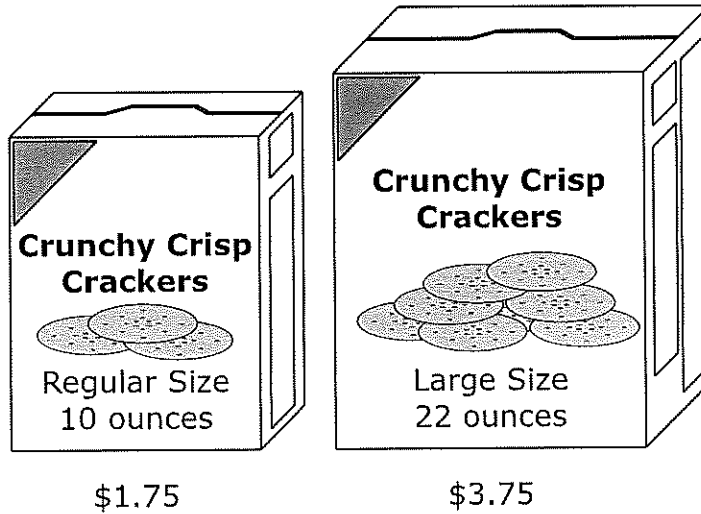
Participation in Sports

	Age Group (years)		
	7-10	11-14	15-18
Number of Students Who Participate	493	345	1,088
Number of Students Who Do Not Participate	147	249	1,384
Total Number of Students	640	594	2,472

What is the difference of the percentage of students in the 7-10 age group who participate in sports and the percentage of students in the 15-18 age group who participate in sports? Round your answer to the nearest whole percent.

This question has three parts.

- 25 Kelsey’s favorite crackers are available in two different sizes. The two different-size boxes and their prices are shown.



Part A

What is the price per ounce of the regular-size box of crackers? Show or explain how you got your answer.

Enter your answer and your work or explanation in the space provided.

Part B

Which size box of crackers has the lower price per ounce? Show or explain how you got your answer.

Enter your answer and your work or explanation in the space provided.

Part C

Kelsey has the following coupons:

- Coupon 1: Save \$0.50 off the total price when you buy 2 regular-size boxes of Crunchy Crisp Crackers.
- Coupon 2: Save \$0.30 off the price when you buy 1 large-size box of Crunchy Crisp Crackers.

Which coupon should Kelsey use to pay the lower price per ounce for the crackers? Show or explain how you got your answer.

Enter your answer and your work or explanation in the space provided.

- 26** A circular mirror has a circumference of 30π inches. What is the area of the mirror?
- A. 30π square inches
 - B. 60π square inches
 - C. 225π square inches
 - D. 900π square inches

- 27** A television originally cost t dollars, including tax. Ricardo purchased the television when it was on sale for 35% off its original cost.
- Which of the following expressions represents the final cost, in dollars, of the television Ricardo purchased?
- A. $t - 0.35$
 - B. $t + 0.65$
 - C. $0.35t$
 - D. $0.65t$

- 30** A school cafeteria manager conducted a survey to determine the students' favorite hot lunch. Five different random samples of 100 students each completed the survey. The results are shown in this table.

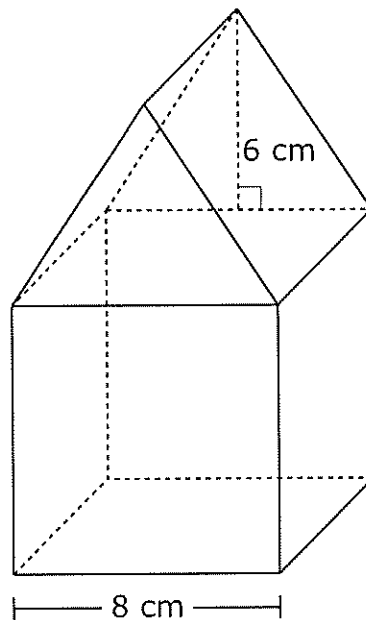
Favorite Hot Lunch

Sample	Grilled Cheese	Pizza	Chicken Nuggets
1	33	57	10
2	52	31	17
3	46	40	14
4	41	42	17
5	47	38	15

There are 2,000 students in the school. Based on the survey results, which of the following is closest to the expected total number of students whose favorite hot lunch is grilled cheese?

- A. 220
- B. 500
- C. 900
- D. 1,040

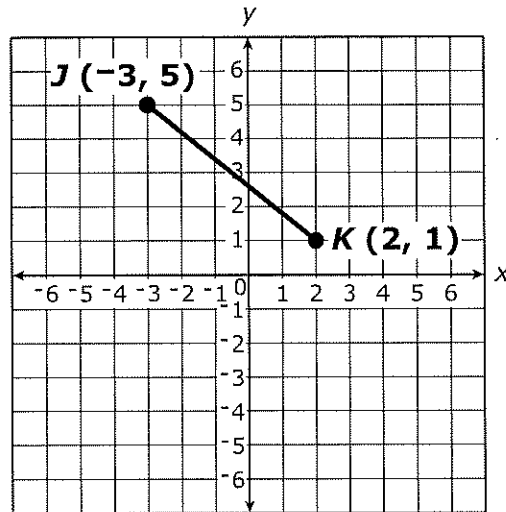
- 31 A solid figure is composed of a cube and a right triangular prism. The figure and some of its dimensions are shown in this diagram.



What is the volume of the figure?

- A. 560 cubic centimeters
- B. 704 cubic centimeters
- C. 728 cubic centimeters
- D. 896 cubic centimeters

- 37 Two vertices and one side of right triangle JKL are shown on this coordinate plane.



Which ordered pair could represent the location of vertex L of right triangle JKL ?

- A. $(-4, 1)$
- B. $(-3, 2)$
- C. $(1, 6)$
- D. $(2, 5)$

- 40 The members of a tennis team have a goal of raising at least \$500 for new equipment. They have already raised \$275. The team members plan to raise more money by washing cars. They will charge \$5 for each car they wash.

Let c represent the number of cars the team members will wash. Which of the following could be used to find the **least** number of cars they must wash to reach their goal?

- A. $5c - 275 > 500$
- B. $5c - 275 \geq 500$
- C. $5c + 275 > 500$
- D. $5c + 275 \geq 500$