

Math CMT Review for Grade 6 *(revised Mar 08)*
ANSWER KEY

NUMBER SENSE

Strand 1 - Place Value

- 1) Sylvia works at a bakery. On Monday, she baked 388 cookies. On Tuesday, Sylvia baked 200 LESS cookies than on Monday. How many cookies did Sylvia bake on Tuesday?

c. 188

- 2) Which of these numerals is equivalent to $5000+400+2$?

b. 5402

- 3) Which means the same as 7500?

a. 75 hundreds

- 4) Which sum has the value of 524?

c. 5 hundreds + 2 tens + 4 ones

- 5) Which sum has the value of 8943?

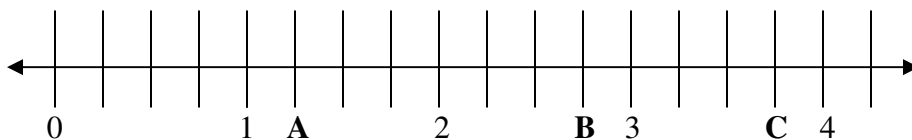
b. 8 thousands + 94 tens + 3 ones

- 6) In which number does 5 have the least value?

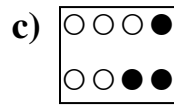
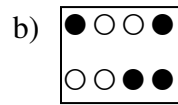
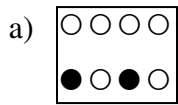
d. 7852

Strand 2 – Pictorial Representation of Numbers

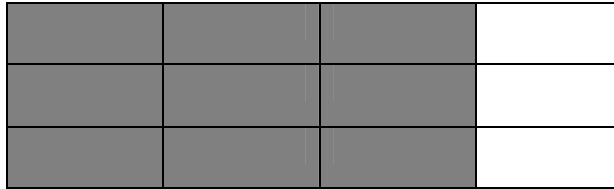
- 1) Which letter indicates $2\frac{3}{4}$ on the number line? **Answer: B**




2) Which of the following shows $\frac{3}{8}$? **Answer is C**



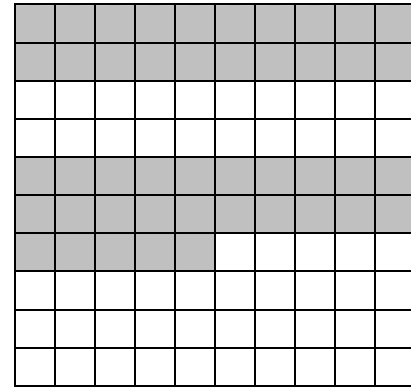
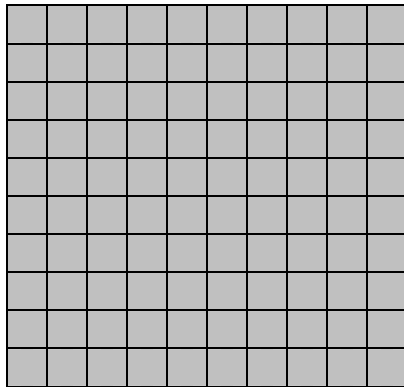
3) Shade $\frac{3}{4}$ of the rectangle.



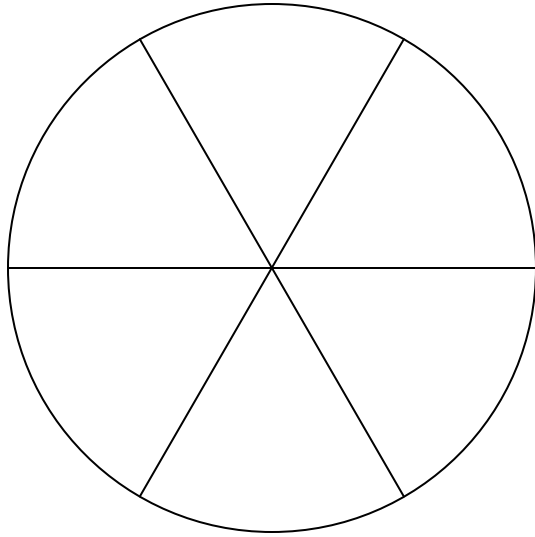
4) What decimal number is represented by the shaded part?

 = 0.01

Answer is 1.45



- 5) Shade $\frac{2}{3}$ of the following circle. **Answer: shade 4 spaces out of six.**



Strand 3 – Equivalent Fractions, Decimals and Percents

- 1) Sarah competed in 9 out of 12 gymnastics meets. Which of the following is another way to describe this?

b. Sarah competed in $\frac{3}{4}$ of the meets.

- 2) Which improper fraction is equivalent to $2\frac{3}{4}$?

c. $\frac{11}{4}$

- 3) Barry baked 10 cookies of different shapes. What decimal number represents the number of heart shaped cookies?



C. 0.3

Strand 4 - Order, Magnitude and Rounding of Numbers

- 1) Amanda collected between 4600 and 5800 pounds of newspaper for recycling. Which could be the amount collected?

a. **5120**

- 2) Adams School is having a food drive. John made a chart of the weight of food collected by each class in the 6th grade.

Pounds of Food Collected

Class	Pounds
Jones	455
White	545
Knight	445
Adams	350
Jackson	235

Which list shows the classes arranged from the least to the greatest number of pounds collected?

b. **Jackson, Adams, Knight, Jones, White**

- 3) Which of the following is the tallest height in feet?

c. **$4\frac{7}{8}$ ft**

- 4) 2,500 is between what two numbers?

a. **2000 and 3000**

- 5) Alex is $10\frac{3}{4}$ years old. Which BEST describes his age?

d. **A little less than 11 years old.**

- 6) The town of Springfield has 6875 cars. Round this number to the nearest thousand.

The town of Springfield has about **7,000 cars.**

- 4) On the lines below write a story problem that can be solved by using the number sentence $9 \times 8 = \square$

Answers may vary.

Strand 6 - Basic Facts

1) $72 \div 9 =$

d. 8

2) $7 \times 6 =$

c. 42

3) $7 \times 8 = \underline{\underline{56}}$

4) $24 \div 6 = 4$

Strand 7 - Computation with Whole Numbers and Decimals

1)
$$\begin{array}{r} 73 \\ +38 \\ \hline 111 \end{array}$$

2) Solve: $\$2.14 + \$0.80 + \$12.03 = \mathbf{\$14.97}$

3) Solve: $\$32.38 - \$4.35 = \mathbf{\$28.03}$

4) Multiply $\$20.00 \times 10$

d. \$200.00

5) Solve this problem.

$363 \times 6 = \mathbf{2,178}$

Strand 8 - Computation with Fractions

- 1) $\frac{5}{8} - \frac{3}{8} = \frac{1}{4}$
- 2) $\frac{3}{6} + \frac{2}{6} = \frac{5}{6}$
- 3) $7\frac{2}{3} + 5\frac{1}{3} = 13$
- 4) $4\frac{1}{2} - 2 = 2\frac{1}{2}$
- 5) $\frac{7}{8} - \frac{4}{8} = \frac{3}{8}$

Strand 9 - Solve Word Problems

- 1) One dozen donuts at the coffee shop costs \$3.60. Each donut cost the same amount. What is the cost of one donut?

The cost of one donut is \$0.30

- 2) A package of 15 computer disks costs \$47.25. If each disk costs the same amount, how much did each disk cost?

\$3.15

- 3) Jenn bought 3 shirts that cost \$12.95 each. She gave the clerk a \$50 bill to pay for the shirts. How much change should Jenn receive?

Jenn should receive \$11.15 in change.

ESTIMATION AND APPROXIMATION

Strand 10 - Numerical Estimation Strategies

- 1) There were 3,823 people at the Westport Arts Festival on Saturday. On Sunday, 5,139 people attended. To get a good ESTIMATE of how many people attended altogether for both days, which expression would be best to use?
 - a. **4,000 + 5,000**

- 2) Alvin needs to multiply 28 by 33. To get a GOOD ESTIMATE of this product which expression would be best for Alvin to use?

b. 30×30

- 3) To estimate the product of 423 and 913, Joe multiplies 400×900 . Is Joe's estimate GREATER than or LESS than the actual amount?

d. Less, because he rounded both numbers down.

- 4) To ESTIMATE the product of 521 and 613, John multiplied 500×600 . Will John's estimate be MORE or LESS than the actual sum?

d. Less, because he rounded both numbers down.

- 5) Josh is helping count supplies for the school picnic. He wants to ESTIMATE the number of hamburgers in 12 cases. Each case holds 24 packages. Each package has 8 hamburgers. What would be a GOOD ESTIMATE of the number of hamburgers?

Answer: Answers will vary.

Explain how you made your estimate.

Strand 11 - Estimating Solutions to Problems

- 1) David completed 100 questions on the test. His teacher said he did $\frac{2}{3}$ of them correctly. Which best describes the number of questions he answered correctly?

b. A little more than 60

- 2) Mr. Jones ordered 18 pizzas for the class party. At the end of the party $3\frac{1}{8}$ pizzas were left. Which describes the number of pizzas the class ate?

d. A little less than 15

- 3) Jane needs to add $7\frac{1}{8} + 4\frac{3}{4}$ to get a good estimate of this sum, which expression would be Best for Jane to use?
- b. **7 + 5**
- 4) Mrs. Jones spent \$682 on groceries last month. This month she spent \$423 on groceries. ABOUT how much less did she spend on groceries this month than last month?
- c. **\$300**
- 5) In June, Christy earned about \$18 for mowing lawns and \$29 for babysitting. ABOUT how much did she earn altogether?
- c. **\$50**

Strands 12 and 13 not tested at Grade 6

MEASUREMENT

Strand 14 - Time

- 1) By the time Kali arrived at the school at 10:00 a.m. she was already 2 hours and 15 minutes late. At what time did school begin?

7:45 a.m.

- 2) The movie started at 2:30 p.m. and ended at 4:20 p.m. How long was the movie?

1hour 50 minutes

- 3) Amy's history class begins at 8:30 and ends at 9:15. How long is the class?

45 minutes.

- 4) Tiffany left her home for the mall at 11:15 A.M and returned home at 2:45 P.M. How long was she gone?

3hours and 30 minutes.

- 5) Sara's mom jogs 25 minutes each day except on Saturday and Sunday. How much time does she spend running in a week?

125 minutes or 2 hours and 5 minutes.

Strand 15 - Approximating Measures

- 1) If the shorter arrow is 3 inches long, ABOUT how long is the other arrow?

- a. 9 in.
- b. 4 in.
- c. 6 in**
- d. 12 in.



- 2) A scale shows a weight of 10 grams. What object is most likely being weighed?
- a. Book
 - b. Pencil**
 - c. Sandwich
 - d. Carton of milk

Strand 16 - Customary and Metric Measurements

- 1) A football field is 100 YARDS long. How many FEET would you run if you ran exactly half way down the field?

Answer: _____ **150 feet** _____

- 2) The 18-wheel truck is 10 meters long. How many centimeters is that?

Answer: _____ **1,000 cm** _____

- 3) A basketball player is 209 cm tall. How many meters tall is she?

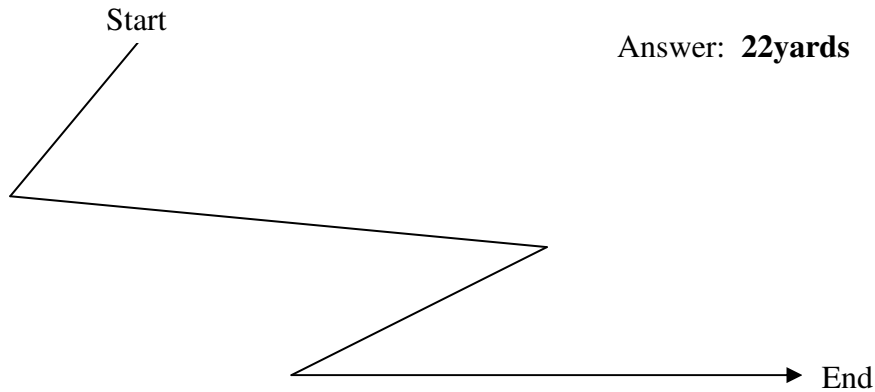
2meter and 9 cm or 2.09 meters.

- 4) Measure the length of the pen to the NEAREST centimeter.



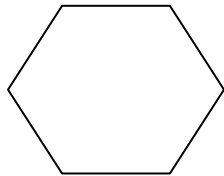
Length = _____

- 5) There is a funny path below. Each half-inch is worth two yards. How many yards do you think it is worth?



Answer: **22yards**

- 6) Determine the PERIMETER of this figure to the nearest CENTIMETER.



Perimeter = **9cm**

- 7) Use your ruler to determine the AREA of the rectangle in square INCHES. Measure to the nearest whole inch.

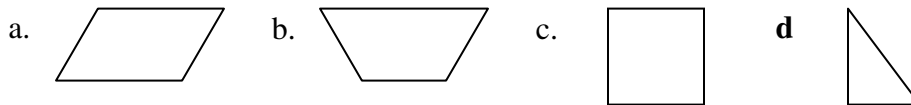


Area = **10square inches**

- 8) The BEST unit to measure the perimeter of your yard would be:
- a. Kilometers
 - b. Millimeters
 - c. Centimeters
 - d. Meters**
- 9) The BEST unit to measure the amount of water in a bathtub would be:
- a. Cups
 - b. Gallons**
 - c. Tons
 - d. Quarts
- 10) The length of a floor in a gym is best measured in
- a. Centimeters
 - b. Liters
 - c. Kilometers
 - d. Meters**
- 11) Sam needed to measure the weight of his father's truck. The BEST unit to measure this would be:
- a. Ounces
 - b. Tons**
 - c. Grams
 - d. Pints

SPATIAL RELATIONSHIPS AND GEOMETRY
Strand 17 - Geometric Shapes and Properties

- 1) Which of the following shapes is NOT a quadrilateral?



- 2) Which of the following is NOT a polygon?

a

- 3) A rectangle with 4 equal sides is a square.
- 4) In the space below, draw a parallelogram. Explain why the figure you drew is a parallelogram.

- 4 sided polygon
- opposite sides congruent
- opposite sides parallel

- 5) In the space below, draw a hexagon. Explain why the figure you drew is a hexagon.

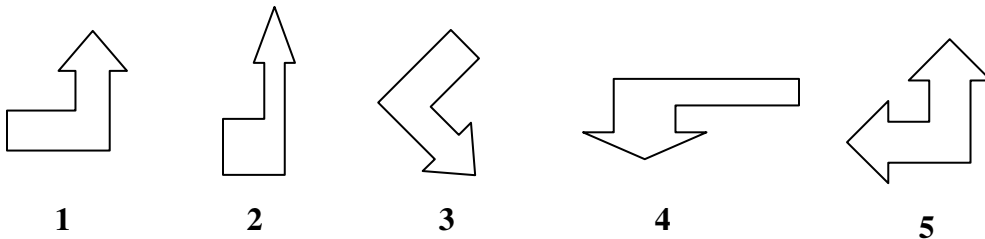
Six sided figure.

Strand 18 - Spatial Relationships

- 1) Which of the following shapes is showing a line of symmetry?

a

- 2) Which two figures are congruent?



- a. 1 and 5
- b. 2 and 3
- c. 1 and 3**
- d. 2 and 4

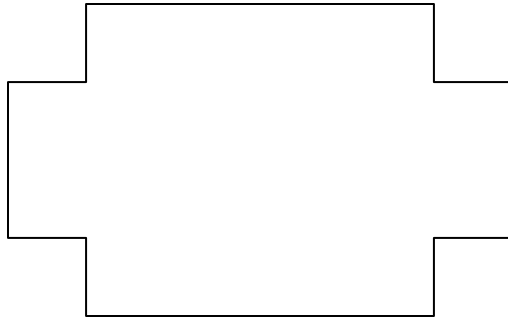
- 3) Which letters have at least one line of symmetry?
a.

A B C D E

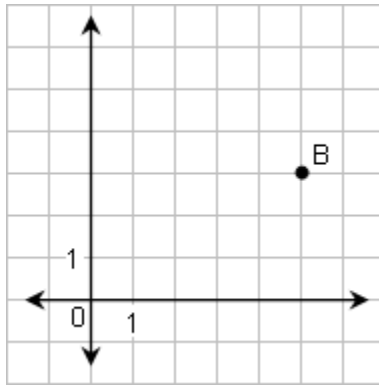
Answer:

B D E

- 4) Draw all lines of symmetry in the figure. **Two lines of symmetry.**



- 5) What is the location of point **B**?



- a. (3, 5)
b. (4, 5)
c. (5, 4)
d. **(5, 3)**

PROBABILITY AND STATISTICS
Strand 19 - Tables, Graphs and Charts

- 1) Ira is comparing the number of small business franchises. **Draw** and label a BAR graph that shows the number of each franchise shown in the table below.

Number of Franchises 1990	
McDonald's	7919
Jazzercise	4407
Dairy Queen	5214
7-Eleven	3010

- 2) Use the table to answer the following question.

Class	Number of Cans Collected
Mr. Smith	652
Mr. Gomez	507
Ms. Castro	553
Ms. Powell	605

How many classes collected more than 500 cans?

- a. 1
 - b. 2
 - c. 3
 - d. 4**
- 3) Use the table to answer the following question.

Number of Students Who Bring a Packed Lunch to School

Days of the week	# of students
Monday	120
Tuesday	90
Wednesday	100
Thursday	109
Friday	70

During how many days did 100 or more students bring their lunch?

- a. 2
- b. 3**
- c. 4
- d. 5

- 4) Use the data from the table below to draw and label a bar graph.

Favorite animal	# of people polled
elephant	55
tiger	30
hippo	70
wolf	60
hyena	5

- 5) Jefferson Middle School conducted a newspaper collection drive. **Create a pictograph** and answer the following questions.



= 10 kilogram (kg) of newspapers

Monday = 20 kg
Tuesday = 45 kg
Wednesday = 45 kg
Thursday = 50 kg
Friday = 55 kg

- a. On which day most newspaper was collected?

Friday.

- b. On which two day the most newspaper was collected?

Thursday and Friday.

Strand 20 - Statistics and Data Analysis

- 1) Use the data from the table below to answer the following questions.

Rivers	Length in Miles
Uruguay	1,000
Bramaputra	1,800
Euphrates	2,235
Gambia	700
Salween	1,500

- a. For a social studies project Rita made a table that shows the length of several rivers in the world. She states Gambia River is about four times the length of the Euphrates River. Is Rita correct? Explain.

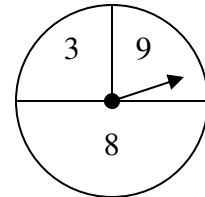
**Gambia $700 \times 4 = 2,800$
Rita is not correct.**

- b. According to Rita's chart which river is about twice the length of the Gambia River? Explain.

Salween river is twice the length of Gambia River.

Strand 21 - Probability

- 1) Kelly and Anna take turns spinning a spinner. Kelly gets a point if the arrow lands on an even number. Anna gets a point if the arrow lands on an odd number. Is this game fair?
- No, because there are more odd numbers than even numbers.
 - No, because the outcomes are not equally likely.
 - Yes, because the half of the circle has odd numbers and half has an even number.
 - Yes, because there are 3 choices.



- 2) How many combinations of two books can be chosen from a group of four on a shelf?
6 combinations.

- 3) An ice cream sundae shop offers a choice of chocolate, vanilla, or strawberry ice cream, chocolate or caramel syrup, and nuts or no nuts on top. How many different types of sundaes can they make?

12 different types of sundaes.

PATTERNS

Strand 22 - Patterns

- 1) What symbol should replace the question mark in the pattern below?

▲ ▲ ♣ ♣ ♣ ♣ ♦ ■ ▲ ? ♣ ♣ ♣ ♣ ♦ ■ Answer is ▲

- 2) How many dots are in Figure 5?

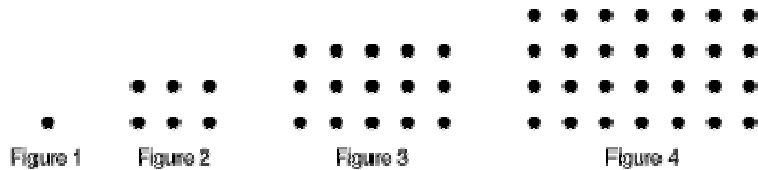


Figure 5 will have 45 dots.

- 3) Find the next two numbers in the sequence.
3, 6, 12, 24, 48, 96, 192

ALGEBRA AND FUNCTIONS

Strand 23 - Algebraic Concepts

- 1) What is the value of \hat{r} in this equation?

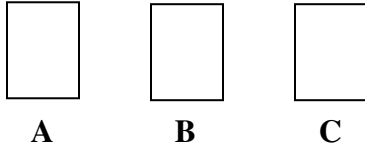
$$38 + \hat{r} = 99$$

- a. 51
b. **61**
c. 71
d. 137
- 2) Identify the solution of $84 \div r = 12$. **$r = 7$**

DISCRETE MATHEMATICS

Strand 24 - Classification and Logical Reasoning

- 1) Jill has three cards with the numbers 5, 6, and 9. She puts them face down.
- The numbers on cards A and C are ODD numbers
 - The number on card B is GREATER than the number on card C.



Use the two clues above. The number on card A is...

- a. 5
 - b. 6
 - c. **9**
 - d. 8
- 2) The Lewis Middle School Band is planning a bus trip to a band competition. There are 138 members in the band and each bus will hold 32 people. How many buses are needed for the trip?
- 5 buses are needed for the trip.**

MATHEMATICAL APPLICATIONS

Strand 25 - Mathematical Applications

- 1) Brent wants to earn \$200 to buy a new skateboard. He can earn money mowing lawns. Brent can earn \$10 for each lawn he mows. He can mow at most 4 lawns per week.

How many weeks must Brent mow lawns to buy the skateboard?

5 weeks

- 2) A soup can display has 66 cans. There is one less can in each row than in the row below, with a single can in the top row. How many cans are in the bottom row?

11 cans

- 3) Suppose a relative matches your age with dollars each birthday. You are 13. How much money have you been given over the years by this relative?

\$91