7th Grade Mathematics
Next Generation Learning Standards

This Test Review Booklet was designed for the Grade 7 Mathematics Assessment Test – Next Generation Mathematics Learning Standards. It provides examples of the format and types of questions that may be on the actual test as administered by the State Education Department. The actual test is administered over two days. We have separated our review tests into two parts so you may simulate a multi-day test :

Part 1: 32 multiple choice questions

Part 2: 6 multiple choice questions

    3 one point constructed response questions

    6 two point constructed response questions

    1 three point constructed response question

Each section should take approximately 60 minutes.

Each student should have the following items made available to them during the test:

    -Ruler   -Protractor

    -Calculator   -Mathematics Reference Sheet

Students must be able to use a scientific calculator. These calculators must include normal arithmetic operations, decimal, change sign, parentheses, square root and Pi functions. Graphing calculators or those with problem solving, programming, place value or inequality solution facilities are not allowed.

For a complete description of restrictions involving calculator usage, see the NY State Education website: www.nysed.gov

Question Distribution

The questions in the practice exams have the same approximate distribution as that described by the NYSED Elementary, Middle, Secondary, and Continuing Education guidelines. They are:

Ratios and Proportional Relationships	24-33%
The Number System	16-25%
Expressions and Equations	26-39%
Geometry	2-7%
Probability and Statistics	12-21%

Special Thanks To:

Luke Masouras - Examgen Inc.

Syracuse, NY • www.EXAMgen.com

For providing technical guidance and development of the test questions

Grade 7 Mathematics Reference Sheet

CONVERSIONS

1 yard = 3 feet
1 mile = 5,280 feet

1 cup = 8 fluid ounces
1 pint = 2 cups
1 quart = 2 pints
1 gallon = 4 quarts

1 pound = 16 ounces
1 ton = 2,000 pounds
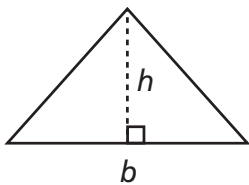
CONVERSIONS ACROSS MEASUREMENT SYSTEMS

1 inch = 2.54 centimeters
1 meter = 39.37 inches
1 mile = 1.609 kilometers
1 kilometer = 0.6214 mile

1 gallon = 3.785 liters
1 liter = 0.2642 gallon

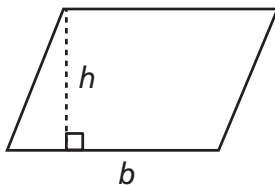1 pound = 0.454 kilogram
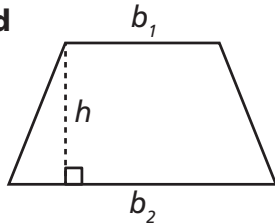1 kilogram = 2.2 pounds

FORMULAS AND FIGURES

Triangle

$A = \dfrac{1}{2}bh$

Parallelogram

$A = bh$

Trapezoid

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

Circle
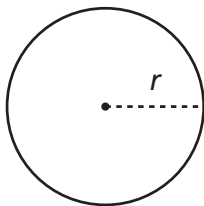
$C = 2\pi r$
$C = \pi d$
$A = \pi r^2$

Simple Interest

$I = prt$ where I is interest,
p is principal,
r is rate, and
t is time

General Prism $V = Bh$

Right Rectangular Prism

Right Triangular Prism

Right Rectangular Pyramid

7th Grade Mathematics

TABLE OF CONTENTS

Correlation of Standards – *In answer key or scan QR code for a printable PDF*

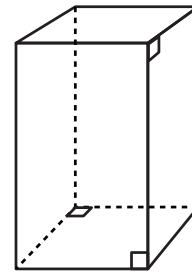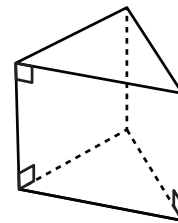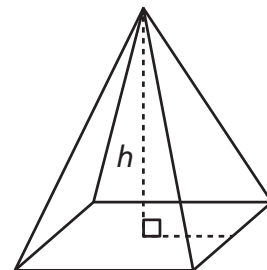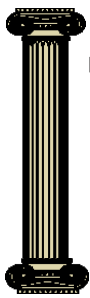# TEST 1

Part 1 contains 32 multiple choice questions Read each question carefully and think about the answer before making your choice. Clearly write the appropriate letter in the space provided.

1 Write "$33,000 earned in 1 year" as a unit rate in months.

  A $2,570/month

  B $1,300/month

  C $5,500/month

  D $2,750/month   1 _____

2 What is "78 radishes planted in a 13−foot long row" written as a unit rate per inch?

  A 72 radishes/inch

  B 0.5 radish/inch

  C 6 radishes/inch

  D 2 radishes/inch   2 _____

3 The number of pieces of mail processed by a machine in the post office is directly proportional to the number of minutes that the machine runs. The machine processes 2,700 pieces of mail in 60 minutes of continuous running. What is the speed of this machine expressed as a unit rate?

  A 45 pieces/minute

  B 45 pieces

  C 45 pieces/hour

  D 45 pieces/second   3 _____

4 Which one of the following ratios has the same unit rate as the line graphed below?

Spelling Bee Scoring
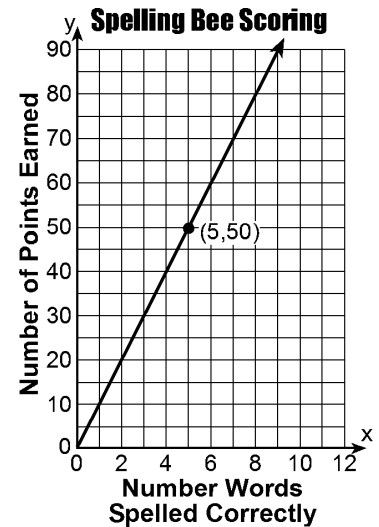
  A $\dfrac{55}{15}$

  B $\dfrac{40}{4}$

  C $\dfrac{8}{85}$

  D $\dfrac{7}{70}$ 4 _____

5 Amity and Beth are traveling in a taxi. The graph below shows a proportional relationship between the time they rode in the taxi and the cost of the taxi ride. Which expression can be used to find the unit rate in dollars?

  A 3 + 4.5

  B $\dfrac{9}{6}$

  C $\dfrac{6}{9}$

  D $\dfrac{0}{0}$

Taxi Ride Cost
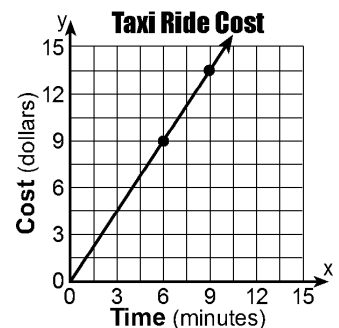
5 _____

6 Approximately how long will it take $200 to double to $400 when the annual interest rate is $8\frac{1}{2}$%?

   A   6.25 years

   B   11.75 years

   C   1.75 years

   D   8.5 years   6 _____

7 Mark bought an MP3 player for $275. If the sales tax is 8.25%, what was the total cost of the MP3 player?

   A $283.25

   B $266.75

   C $297.69

   D $252.31   7 _____

8 If the check at a restaurant totals $115.99 and the customer leaves a 15% tip, what is the total cost of the meal?

   A $133.39

   B $123.39

   C $17.40

   D $143.39   8 _____

9 Add: $-42.67 + (+19.4) + (-1.2)$

   A   24.87

   B   24.47

   C   −22.07

   D   −24.47   9 _____

10 Add: $+3\frac{1}{4} + (-2\frac{1}{2})$

   A $-1\frac{1}{4}$

   B $5\frac{3}{4}$

   C $\frac{3}{4}$

   D $-\frac{3}{4}$ 10 _____

11 What number makes the subtraction sentence $\square - -8.73 = 22.09$ true?

   A   13.36

   B   30.82

   C   −30.82

   D   −13.36   11 _____

12 Which decimal is equal to $\frac{1}{8}$?

   A   3.6

   B   0.125

   C   8.0

   D   0.36   12 _____

13 Which decimal is equal to $\frac{6}{25}$?

   A   8.5

   B   0.24

   C   0.85

   D   4.167   13 _____

14 Three girls want to share $5\frac{1}{4}$ pounds of taffy equally. How much taffy should each girl get?

A $1\frac{1}{3}$ pounds

B $2\frac{1}{3}$ pounds

C $1\frac{5}{8}$ pounds

D $1\frac{3}{4}$ pounds   14 _____

15 A car used $12\frac{3}{10}$ gallons of gasoline on a 369−mile trip. How many miles did this car travel on one gallon of gasoline?

A 24

B 26

C 28

D 30   15 _____

16 How many lengths of $1\frac{7}{8}$ inches can be cut from a wooden dowel measuring $7\frac{1}{2}$ inches?

A 5

B 6

C 4

D 3   16_____

17 During the month of August, Nick worked $\frac{2}{3}$ as many hours as he did during the month of July. If he worked 24 hours in August, how many hours did he work in July?

A 32

B 16

C 38

D 36   17 _____

18 Simplify the given expression:
$-13m + m =$

A $-14m$

B $-12m$

C $14m$

D -12 18 _____

19 Simplify the given expression:
$5x - 3x + 5 =$

A $2x + 5$

B $-2x + 5$

C $2x^2 + 5$

D $7x$ 19 _____

20 Simplify the given expression:
$-9x^2 - 3x^2 - 4x^2 =$

A $-2x^2$

B $16x^2$

C $-16x^2$

D $-16x^6$ 20 _____
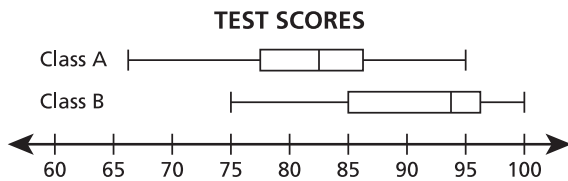
Part 2 contains 6 multiple choice questions, and 9 constructed response questions. Read each question carefully and think about the answer before making your choice.

- Clearly write the appropriate letter in the space provided for the 6 multiple choice questions.
- Write your answer in space provided for the 3 one point constructed response questions.
- Show your work and write your answer in space provided for the 6 two point and 1 three point constructed response questions.
- You have been provided with mathematics tools (a ruler, a protractor, and a calculator) and a reference sheet to use during the test. It is up to you to decide when each tool and the reference sheet will be helpful. You should use mathematics tools and the reference sheet whenever you think they will help you to answer the question.

33 The math test scores for Class A and Class B are represented in the box plots shown below.

TEST SCORES

Which statement about the relationship between the scores of the two classes is true?

A The median score for Class A is greater than the median score for Class B.

B The range of the scores for Class A is less than the range of the scores for Class B.

C The interquartile range for Class B is greater than the interquartile range for Class A.

D The second quartile value for Class B is less than the second quartile value for Class A.   33 _____

34 A student has a bus pass with a balance of $30.00. Each time the student rides the bus, the balance on the bus pass decreases by $2.25. What is the greatest number of bus rides the student can take using the bus pass?

A 10   **C** 14

B 13   **D** 15   34 _____

35 Maggie owns a dog grooming business. The prices for two services are listed below.

- $31.50 for a dog wash
- $17.00 for a nail trim

A customer receives an 18% discount when paying for both a dog wash and a nail trim. What is the total price the customer will pay for a dog wash and a nail trim with the discount?

A $18.00   **C** $42.83

B $39.77   **D** $48.50   35 _____

36 At a deli, customers buying a sandwich can choose one type of bread, one type of meat, and one type of cheese. The options for each sandwich are listed below.

•bread: white or wheat
•meat: turkey or beef
•cheese: American, Swiss, or cheddar

Assuming each choice is equally likely, what is the probability a customer will choose a sandwich with white bread, turkey, and Swiss cheese?

A $\dfrac{1}{12}$ **C** $\dfrac{1}{4}$

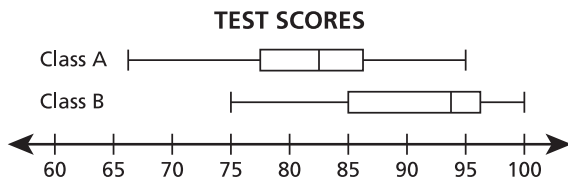**B** $\dfrac{1}{7}$ **D** $\dfrac{1}{3}$ 36 _____

Part 2 contains 6 multiple choice questions, and 9 constructed response questions. Read each question carefully and think about the answer before making your choice.

- Clearly write the appropriate letter in the space provided for the 6 multiple choice questions.
- Write your answer in space provided for the 3 one point constructed response questions.
- Show your work and write your answer in space provided for the 6 two point and 1 three point constructed response questions.
- You have been provided with mathematics tools (a ruler, a protractor, and a calculator) and a reference sheet to use during the test. It is up to you to decide when each tool and the reference sheet will be helpful. You should use mathematics tools and the reference sheet whenever you think they will help you to answer the question.

33 The math test scores for Class A and Class B are represented in the box plots shown below.

TEST SCORES

Class A

Class B

60 65 70 75 80 85 90 95 100

Which statement about the relationship between the scores of the two classes is true?

A The median score for Class A is greater than the median score for Class B.

B The range of the scores for Class A is less than the range of the scores for Class B.

C The interquartile range for Class B is greater than the interquartile range for Class A.

D The second quartile value for Class B is less than the second quartile value for Class A.   33 _____

34 A student has a bus pass with a balance of $30.00. Each time the student rides the bus, the balance on the bus pass decreases by $2.25. What is the greatest number of bus rides the student can take using the bus pass?

A 10   **C** 14

B 13   **D** 15   34 _____

35 Maggie owns a dog grooming business. The prices for two services are listed below.

- $31.50 for a dog wash
- $17.00 for a nail trim

A customer receives an 18% discount when paying for both a dog wash and a nail trim. What is the total price the customer will pay for a dog wash and a nail trim with the discount?

A $18.00   **C** $42.83

B $39.77   **D** $48.50   35 _____

36 At a deli, customers buying a sandwich can choose one type of bread, one type of meat, and one type of cheese. The options for each sandwich are listed below.

•bread: white or wheat
•meat: turkey or beef
•cheese: American, Swiss, or cheddar

Assuming each choice is equally likely, what is the probability a customer will choose a sandwich with white bread, turkey, and Swiss cheese?

A $\frac{1}{12}$ **C** $\frac{1}{4}$

B $\frac{1}{7}$ **D** $\frac{1}{3}$ 36 _____

40 *This question is worth 1 credit.*

Kasey and Andrew each went for a walk, once a day, for 4 days.

- Kasey walked $\frac{3}{4}$ mile each day.

- Andrew walked $\frac{3}{5}$ mile each day.

At the end of days, how much farther, in miles, had Kasey walked than Andrew?

Show your work.

_____

_____

41 *This question is worth 1 credit.*

Find the average of the numbers in the stem and leaf plot to the nearest whole number.

Show your work.

Stem	Leaf
4	9 9
5	2 3 3 3 5 7 8 8 8
6	0 0 4 4

KEY: 6|4 means 64

Answer _____

42 *This question is worth 2 credits.*

As captain of his football team, Jamal gets to call heads or tails for the toss of a fair coin at the beginning of each game. At the last three games, the coin has landed with heads up. What is the probability that the coin will land with heads up at the next game? Explain your answer.

Show your work and explain your answer on the lines below.

Answer _____

_____

_____

43 *This question is worth 2 credits.*

A student programs a robot to travel at a constant speed across the classroom floor. The table represents the relationship between the distance, in feet, the robot travels over a period of time, in seconds.

Write an equation to represent the distance, d, in feet, the robot travels in t seconds. Using the equation, how many seconds will it take for the robot to travel 11 feet?

Show your work.

DISTANCE ROBOT TRAVELED

Time, t (seconds)	Distance, d (feet)
2	1
4	2
10	5
16	8

Answer _____ seconds

48 *This question is worth 3 credits.*

Part A

Write the sample space for the outcomes of the toss of two six-sided die.

	1	2	3	4	5	6
1						
2						
3						
4						
5						
6						

Part B

If order is important, how many outcomes are possible?

Answer _____ outcomes

Part C

If order is not important, how many outcomes are possible?

Answer _____ outcomes

Test 1 – Part 2