IIII монашк
MARSHALL SCHOOL OF SKILLED TRADES
& APPRENTICESHIP

Pre-Apprenticeship Pre-Admissions Test

Sample Questions

Included in this package:

Test Sample Questions of the following:

Language Skills
Reading Comprehension
Applied Math
Mechanical Reasoning

Please Note: The sample questions provided do not reflect the level of difficulty of the actual assessments. These questions are simplified and may not be presented in the same format as on the actual test. All tests are multiple choice format with a time limit.

Assessment Details: Total Time for the Session is approx 1.5 hrs. The assessment is made up of four sections. Each section is multiple choice and is timed individually.

Language Skills	18 questions
Reading Comprehension	12 questions
Applied Math	19 questions
Mechanical Reasoning	11 questions
Total # of Questions / Assessment Time	**60 questions timed for 70 min.**

No external aids including formula sheets / dictionaries are permitted.

Calculators are permitted, however you may NOT use the calculator function on a cell phone / tablet or laptop.

Scrap paper and pencils will be provided.

(Limited # of calculators will be available for use during the assessment).

Language Skills

1. When a statement or fact supports an unproven claim, it is said to be:
   a) Validate
   b) Incidental
   c) Negligible
   d) Contradict

2. When two things are different, they are best described as:
   a) Contemporary
   b) Diluted
   c) Dissimilar
   d) Affiliated

3. When multiple things are combined, they are said to be:
   a) Prioritized
   b) Consolidated
   c) Mandated
   d) Disjointed

Choose the word that means the opposite of the underlined word.

4. Vacant building
   a) Empty
   b) Deserted
   c) Occupied
   d) Abandoned

5. Meticulous planning
   a) Conscientious
   b) Careless
   c) Precise
   d) Concise

6. Amazing results
   a) Insignificant
   b) Astonishing
   c) Fascinating
   d) Incredible

Reading Comprehension

Read the passage. Then read each question about the passage. Choose the best answer for each question.

Passage 1:

Urban Sprawl is a pattern and pace of land development in which the rate of land consumed for urban purposes exceeds the rate of population growth and which results in an inefficient and consumptive use of land and its associated resources. Bear in mind how urban sprawl is defined depends upon the perspective of who presents the definition. Some experts describe suburban sprawl as irresponsible, often poorly-planned development that destroys green space, increases traffic and air pollution, crowds schools and drives up taxes. It is a known fact that urbanization is forcing municipalities to adapt to rigid guidelines while facing challenges from all sides.

1. This passage focuses on describing:
    a) Higher taxes and over-populating the schools system
    b) The excessive use of land for urban expansion is destroying our greenspace.
    c) The increase in traffic congestion.
    d) Urban sprawling is just a myth and does not exist.

2. According to this passage, urban sprawl consists of land development that is:
    a) Compact, high in density and close to the urban centre.
    b) Very efficient in its use of land and resources.
    c) Often not well planned and harmful to green space.
    d) Good for the population.

Passage 2

The Department of Consumer Affairs routinely conducts price verification inspections at retail locations to confirm that prices charged to consumers are the same as those posted or advertised.

On a typical visit to a store, an inspector will select up to 15 items and take them to the cashier for payment. When the items' bar codes are scanned at the register, the price showing at the register must match what is posted on the shelf or advertised. If the prices do not match, the store will receive a notice of violation and the store will be fined.

3. According to the passage, a store could be fined when

    a. an inspector finds an item on sale

    b. 15 items are being purchased at the same time

    c. an item is priced at the advertised price

    d. when the shelf or advertised price does not match the charged price..

4. Read each group of four words. Decide which word is **NOT** spelled correctly.

Sample A

    a. smiling
    b. haste
    c. retern
    d. lists

Sample B

    a holiday
    b. daughter
    c canary
    d theif

Sample C

    a. foresg
    b. bacon
    c. lasting
    d. bakery

Sample D

    a. forever
    b. monthly
    c. sunsit
    d. plants

MATH ASSESSMENT SAMPLE QUESTIONS

This test is made up of 7 topics. The total duration of the test is 1 hour. All questions are multiple choice.

Topic 1: Fractions

1) Reduce $\dfrac{9}{36}$

2) Convert this fraction into a mixed number in lowest terms $\dfrac{60}{25}$

3) Find the Least Common Denominator of $\dfrac{1}{3}, \dfrac{1}{15}, \dfrac{1}{9}$

4) Two pins measure $\dfrac{3}{6}$ and $\dfrac{4}{9}$

    a) What is the length of the larger pin?

    b) What is the length difference between the two pins?

5) Add the fractions and bring your answer to lowest terms $\dfrac{1}{5} + \dfrac{1}{10} + \dfrac{1}{6}$

6) Add $2\dfrac{1}{2} + \dfrac{1}{4} + \dfrac{1}{5}$

7) Add $4\dfrac{1}{3} - 1\dfrac{1}{7}$

8) Multiply $4\dfrac{2}{9} \times 1\dfrac{1}{6}$

9) Divide $3\dfrac{1}{2} \div 1\dfrac{2}{3}$

10) Simplify $\dfrac{9\dfrac{3}{4} + \dfrac{1}{5}}{\dfrac{5}{8}}$

11) Find the value of x given $\dfrac{x}{23} = \dfrac{15}{3}$

Topic 2: Decimals

1) Divide 1.3289 by 0.431 and round to three decimal places

2) Convert $158\dfrac{3}{5}$ to a decimal. Round to one decimal place.

3) Convert 11.78 to a mixed fraction

4) Evaluate 2,300 + 3.13 + 1.09. Round to one decimal place.

5) Evaluate 1.35 – 26.491 + 11.7. Round to three decimal places.

6) Evaluate 0.6 x 12.34 x 1.4. Round to two decimal places.

7) Divide 1.113 by 0.56. Round to three decimal places

8) Determine the volume of an aquarium with these definitions:
Length = 78 cm; Width = 6 cm; Height = 43 cm

9) Bob makes $888.87 per week before deductions. The following deductions are made from his paycheque: Income Tax $124.00; Company Pension $42.86; C.P.P. $38.97; and Dental Plan = $31.97.
What are his total Deductions? What is his take-home pay?

10) Determine how much change you would get from $100 if you purchased 31.9 litres of gas at a cost of 96.7 cents per litre.

Topic 3: Percents

1) Express the following as percents:

Decimal	Percent
a) 0.62	
b) 3.312	
c) 13	

2) Express the following percents as decimals:

	Percent	Decimal
a)	79 %	
b)	317.2 %	
c)	$14\frac{1}{3}$ %	

3) Express the following fractions as percents:

	Fraction	Percent
a)	$\frac{887}{962}$	
b)	$\frac{14}{100}$	
c)	$7\frac{7}{14}$	

4) Express the following percents in fractional form in lowest terms:

	Percent %	Fraction Form
a)	86 %	
b)	52 %	
c)	$7\frac{1}{2}$ %	

5) Determine $89\frac{1}{2}\%$ of $ 3,633 rounded to the nearest cent.

6) 316 kg is 15% of what measurement?

7) Helmer Co. Produces 1,090 DVD's per year. If 1.4% of these are defective, how many defective DVD's are produced per year? Round your answer to the nearest whole number.

8) Mohawk Digital Centre sells webcams for $120 each. In an attempt to increase profit they increased the price by $5.81. Express this increase as a percent of the original price.

9) Mohawk Digital Centre sells digital cameras for $390.45 each. In an attempt to increase sales they reduced the price by 2%. What is the new price after the reduction?

Topic 4: Order of Operations

1) Evaluate the expression to two decimal places:
$$5 + 5 - 8 + 4 \div 6$$

2) Evaluate the expression to two decimal places:
$$\left(2 \div 6 \times 5 \right)^2 \div 5 - 6$$

3) Evaluate the expression to two decimal places:
$$6 - \left[8 - \left(2 + 9 \times 3 \right) \right]$$

4) Evaluate the expression to two decimal places:
$$4^2 - \left\{ 9^3 + \left[1^3 - \left(4 + 3 \right) \right] \right\}$$

5) The formula to obtain the area of a certain shape is:
$$Area = \frac{L}{2} \left(w + d - t \right)$$

Determine the area when:

L = 18 m; t = 2.3 m; w = 4.6 m; d = 10.1 m

6) Calculate the future value of S of an annuity using the following formula:

$$S = R \left[\frac{(1+i)^n - 1}{i} \right]$$

Given: $R = \$250$; $i = 0.01$; $n = 13$

7) Calculate the Book Value B using the following formula:

$$B = P - \left[\frac{5m(2n - 0.75m)}{n^3 - 2} \right](P - S)$$

Given: $P = \$151,788$; $m = 9$; $n = 11$; $S = \$35,000$

Topic 5: Laws of Signs

1) Simplify: $-\left[+ (-19) \right]$

2) Simplify: $-\left[- (-234) \right]$

3) True or False? $\left| -88 \right| = \left| 88 \right|$

4) True or False? $-96 > -105$

5) Evaluate: $7 + \dfrac{1}{-3} + 4\dfrac{1}{6}$

6) Evaluate:

$$\left(7\frac{1}{3} \right)\left(\frac{3}{-4} \right) \div (-2)$$

7) A person leaves the bus terminal and goes 15 blocks WEST for coffee. Next, he goes 2 blocks EAST to mail a letter and then 5 blocks WEST to visit a friend. Upon leaving his friend's house he is struck by a car and an ambulance takes him 9 blocks EAST to the hospital. Determine the direction and number of blocks he must travel from the hospital to make it back to the bus terminal.

1) Determine the area of the following figure.
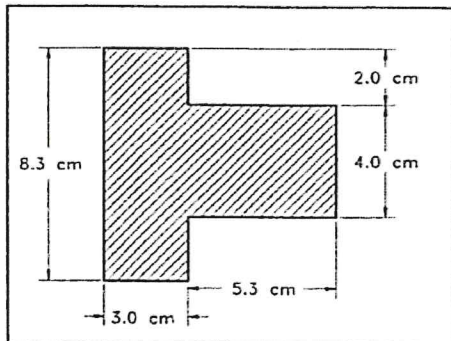
2) Determine the area of the following figure.
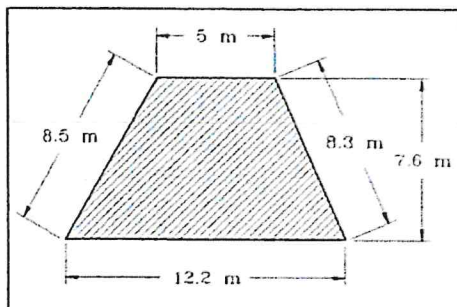
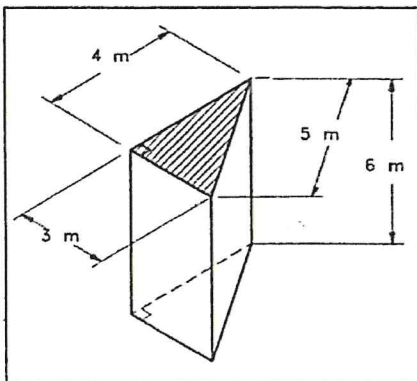3) Determine the perimeter and area of the following figure.

4) Determine the shaded area:

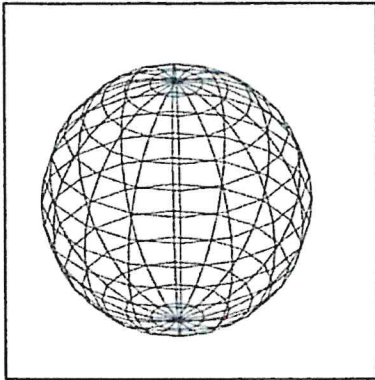8.7 mm

5.7 mm

1.5 mm ø

10.5 mm
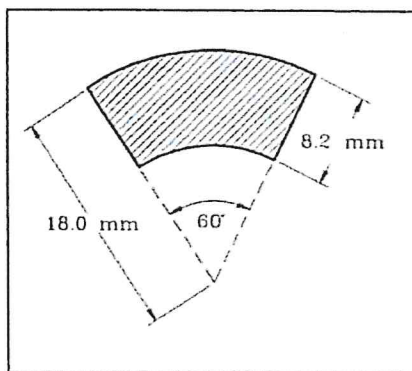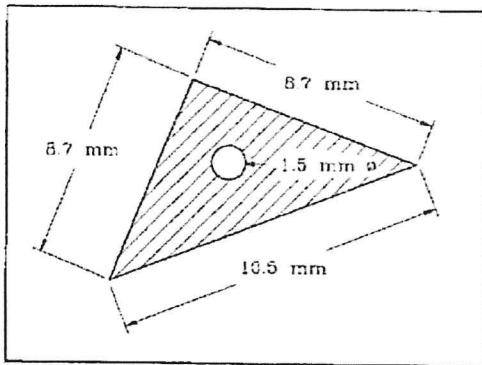
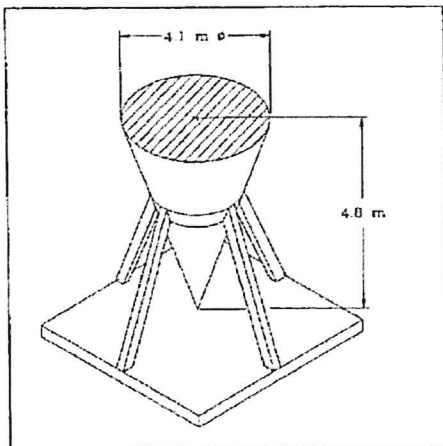5) Determine the shaded area:

3.9 cm

7.1 cm ø

2.0 cm
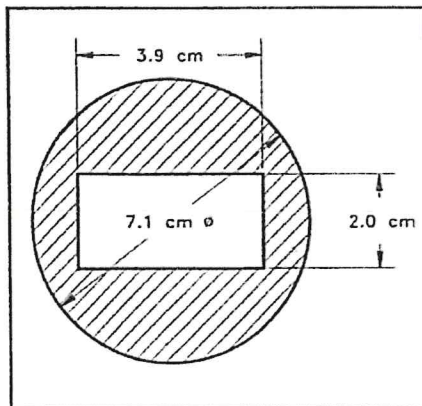
6) Determine the volume and total surface area of the right triangular prism shown.

4 m

5 m

6 m

3 m

7) Determine the volume and surface area of the spherical tank with a diameter of 12.8 metres.

8) Determine the volume and total surface area of the illustrated covered conical container.

9) Determine the total volume of the tank shown. The top is spherical in shape.
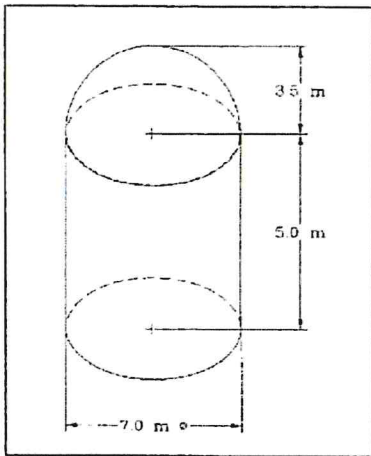
10) Determine the mass of the part shown if it is constructed from material that has a density of 0.0008 kg/cm^3. Density is mass per unit volume $\left(D = \dfrac{M}{V} \right)$
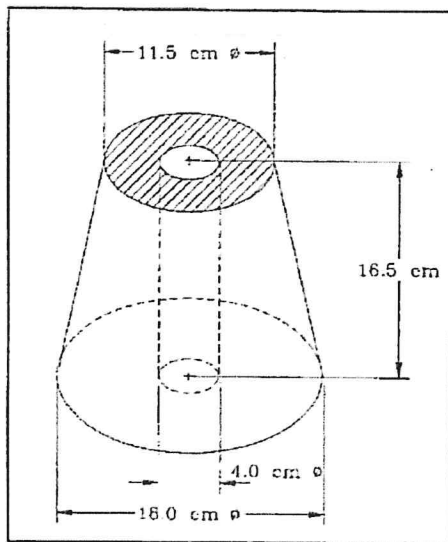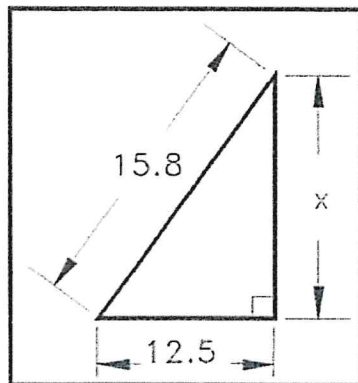
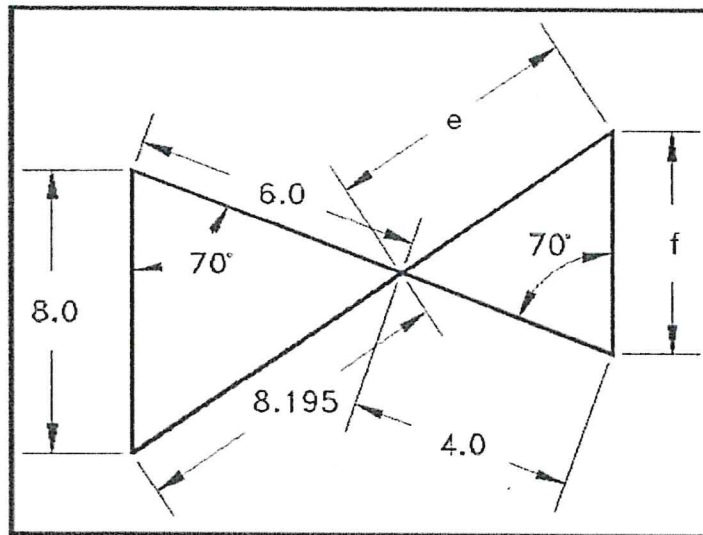11) Determine the total volume of the figure shown.
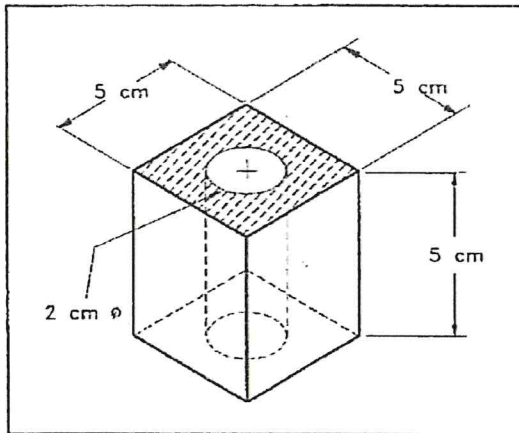
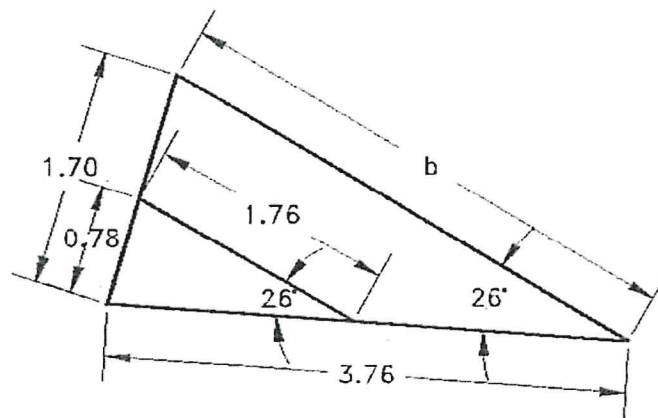

Topic 7: Trigonometry & Geometry

1) Determine the length of the unknown side (x) for the following triangle:

15.8

X

12.5

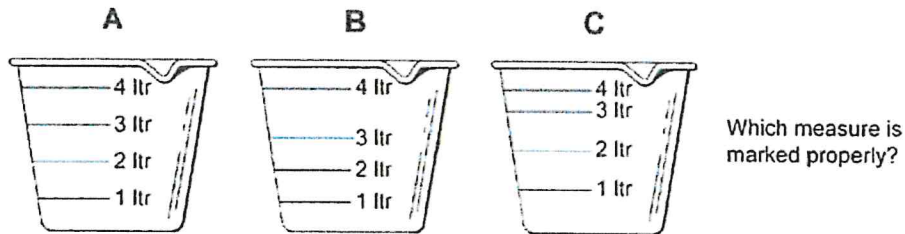2) Determine the value **e** in the given figure.
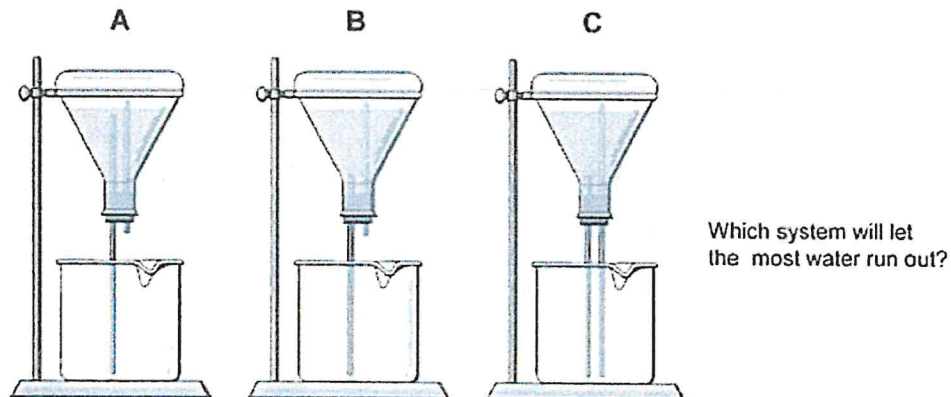

3) Determine the value **b** in the given figure.

MECHANICAL REASONING SAMPLE QUESTIONS

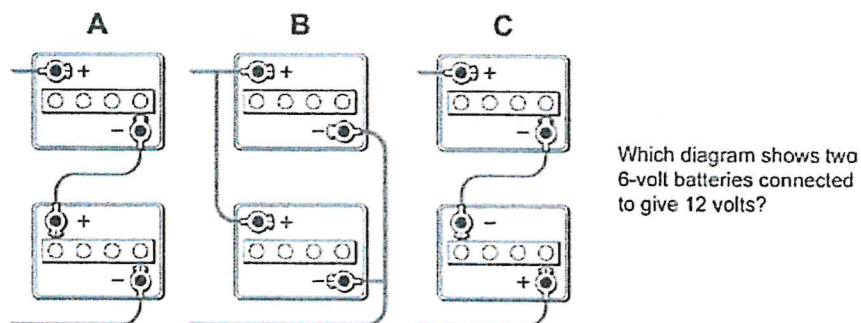The test is made up of 70 multiple choice questions, and the total duration of the test is 1 hour.
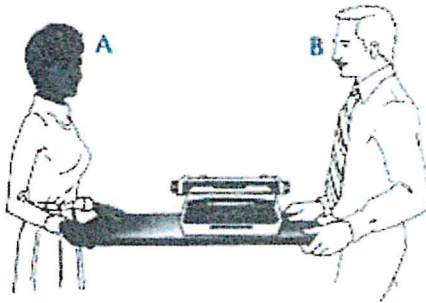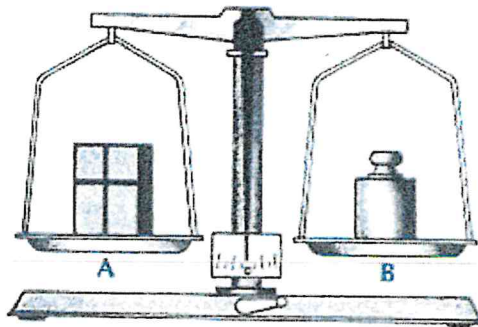
1.

A	B	C
4 ltr	4 ltr	4 ltr
3 ltr	3 ltr	3 ltr
2 ltr	2 ltr	2 ltr
1 ltr	1 ltr	1 ltr

Which measure is marked properly?

2.

A   B   C

Which system will let the most water run out?

3.

A   B   C

Which diagram shows two 6-volt batteries connected to give 12 volts?

4.

Example X.

Which person has the heavier load?
(If equal, mark C.)

5.

Example Y.

Which weighs more?
(If equal, mark C.)

Answers for Language Skills Sample Questions

1. A
2. C
3. B
4. C
5. B
6. A

Answers for Reading Comprehension Sample Questions

1. B
2. C
3. D

Answers for Spelling Sample Questions

1. C
2. D
3. A
4. C

Answers for Mechanical Reasoning Sample Questions

1. C   2. B   3. A   4. B   5. C

Answers for Math Assessment Sample Questions

Topic 1: Fractions

1) $\dfrac{1}{4}$

2) $2\dfrac{2}{5}$

3) 45

4) $\dfrac{1}{2}, \dfrac{1}{18}$

5) $\dfrac{7}{15}$

6) $2\dfrac{19}{20}$

7) $3\dfrac{4}{21}$

8) $4\dfrac{25}{27}$

9) $2\frac{1}{10}$

10) $15\frac{23}{25}$

11) 115

Topic 2: Decimals

1) 3.083
2) 158.6
3) $11\frac{39}{50}$
4) 2,304.2
5) - 13.441
6) 10.37
7) 1.988
8) 20, 124 cm^3
9) $237.80 ; $651.07
10) $69.15

Topic 3: Percents

1)

a. 62 %

b. 331.2 %

c. 1,300 %

2)

a. 0.79

b. 3.172

c. 0.143

3)

a. 92.2%

b. 14%

c. 750%

4)

a. $\frac{43}{50}$

b. $\frac{13}{25}$

c. $\frac{3}{40}$

5) $3251.54

6) 2,106.67 kg
7) 15
8) 4.84%
9) $382.64

Topic 4: Order of Operations

1) 2.67
2) -5.44
3) 27
4) -707
5) 111.6 m^2
6) $3452.33
7) $91482.68

Topic 5: Laws of Signs

1) 19
2) -234
3) True
4) True
5) $10\frac{5}{6}$
6) $2\frac{3}{4}$
7) 9 Blocks in the East Direction

Topic 6: Mensuration

1) P = 33.2 cm   A = 46.2 cm^2
2) P = 34 m   A = 65.36 m^2
3) P = 45.5 mm   A = 119.3 mm^2
4) A = 34.653 mm^2
5) A = 31.79 cm^2
6) V = 36 m^3 TSA = 84 m^2
7) V = 1098.07 m^2 SA = 514.719 m^2
8) V = 21.124 m^3 TSA = 46.816 m^2
9) V = 282.2 m^3
10) V = 2657.5 cm^3 Mass = 2.126 kg
11) V = 109.29 cm^3

Topic 7: Trigonometry & Geometry

1)   x = 9.66
2)   e = 5.46
3)   b = 3.84