PRE-ADMISSION TESTING SAMPLE QUESTIONS – BUSINESS MATH

Testing Information:

- Multiple choice style, computer based test, timed at 1 hour and 20 minutes
- Topics include: fractions, decimals, percents, order of operations, laws of signs (approx. 30 questions)
- Calculators are not permitted, scrap paper and pencils can be used for rough calculations

For information regarding minimum score requirements for eligibility into your program, please contact Admissions.

Testing Policies:

- Pre-Admission math tests are valid for three (3) Mohawk College intake terms. Intake terms include Fall, Winter and Summer.
- It replaces a Math from your transcript for eligibility into a program at *Mohawk College* ***only*****.**
- The grades are not transferrable to other colleges
- **Photo I.D** is required for check-in. You will not be permitted to test without valid photo I.D.

If you require testing accommodations due to a disability, please call the Testing Centre at 905-575-2448.

Pre-Admission Testing Centre
905-575-2448
preadmissiontesting@mohawkcollege.ca

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Topic 1: Fractions

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

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

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

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

   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 $\frac{1}{5}+\frac{1}{10}+\frac{1}{6}$

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

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

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

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

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

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

Topic 2: Decimals

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

2) Convert $158\frac{3}{5}$ 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:
$$S = R\left[\frac{\left(1 + i \right)^n - 1}{i} \right]$$
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: $-\left[+ \left(-19 \right) \right]$

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

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

4) True or False? $-96 \rangle -105$

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

6) Evaluate:

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

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.

Answer Sheet – Business Math

Topic 1: Fractions

1) $\frac{1}{4}$
2) $2\frac{2}{5}$
3) 45
4) $\frac{1}{2}, \frac{1}{18}$
5) $\frac{7}{15}$
6) $2\frac{19}{20}$
7) $3\frac{4}{21}$
8) $4\frac{25}{27}$
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