Year 7 Mathematics

End Term 2

45 marks

40 mins

Date

Instructions: 1. Answer all questions   2. Calculators permitted

Sample 1

Question 1 (13 marks - 1 mark each)

a) Put the following fractions $\frac{1}{6}, \frac{1}{4}, \frac{1}{2}, \frac{1}{5}$ in order from smallest to largest.

b) Complete the following:

i) $\frac{5}{6} = \frac{?}{10}$

ii) $\frac{3}{4} = \frac{?}{8} = \frac{?}{12}$

c) Change $\frac{9}{4}$ to a mixed number:

d) Change $2\frac{2}{3}$ to an improper fraction:

e) Calculate each of the following:

i) $\frac{2}{5} + \frac{1}{5}$

ii) $\frac{2}{3} + \frac{1}{5}$

iii) $\frac{6}{7} - \frac{2}{7}$

iv) $\frac{4}{5} - \frac{1}{2}$

v) $\frac{1}{5} \times \frac{1}{2}$

vi) $\frac{3}{4} \times \frac{1}{6}$

vii) $\frac{1}{3} \div \frac{1}{2}$

viii) $\frac{4}{5} \div \frac{2}{3}$

Question 2 (11 marks - 1 each)

a) Find the value of each of the following:

i) $12 \div 3 + 1$

ii) $3 \times 4 \div (1 + 1)$

b) Write an algebraic expression for each of the following:

i) A number minus 5

ii) The product of a number and seven

c) Find the value of each of the following algebraic expressions given that x = 2 and y = 3.

i) $x + y$

ii) $2x - y$

d) Write an algebraic expression for each of the following pairs:
Find the value of each algebraic expression using x= 4, y = 3.
Comment on the values obtained.

i) y times x **and** x times y

ii) x minus two **and** two minus x

e) Find the value of each algebraic expression using x= 2, y = 3, z = 1.
Comment on the values obtained.

i) $(x + y) + z$ **and** $x + (y + z)$

ii) $(x - y) - z$ **and** $x - (y - z)$

f) The power output of a car speaker, in watts, is given by the formula:
Power = v×v÷R, where v is the car's voltage and R is the impedance
of the speaker being used. What power is generated by a speaker
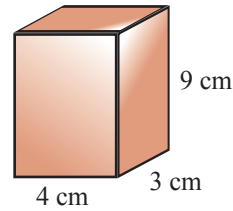with v = 12 volts, and R = 2 ohms?

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Question 3 (8 marks)

a) Make the following unit conversions:

    i) $6.1\ m^3$ to cm^3 **ii)** $0.7\ cm^3$ to mm^3 **iii)** 8000 mL to L   **iv)** 0.45 L to mL   (1 each)

b) Find the volume of the following prism:

9 cm

3 cm

4 cm

(2)

c) How many litres of water is needed to fill a swimming pool 50 m long,
8 m wide, and 1.6 m deep ($1\ m^3 = 1000$ L)?

(2)

Question 4 (13 marks)

a) Arrange the integers in ascending order (smallest to largest):   4, ⁻2, 1, 0, ⁻1
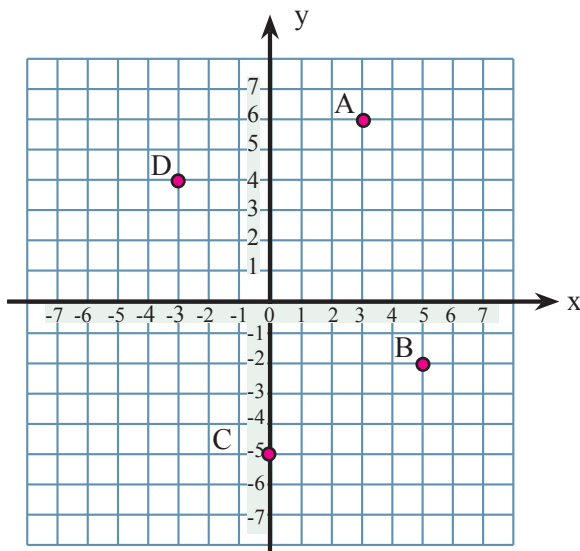
(1)

b) Calculate the following:

    i) $5 - 7$ **ii)** ⁻3 + 5   **iii)** ⁻4 − 2

    iv) 5 − ⁻3   **v)** ⁻3 − ⁻4   **vi)** 5 + ⁻2 − ⁻3   (1 each)

c) Plot the following points on the Cartesian plane and determine
if the pattern is linear: $(-2,0), (-1,2), (0,4), (1,6), (2,8)$.

(2)

d) Write the coordinates of each of the points in the graph below:

(1 each)

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Year 7 Mathematics

End Term 2

45 marks

40 mins
Date

Instructions: 1. Answer all questions   2. Calculators permitted

Sample 2

Question 1 (13 marks - 1 mark each)

a) Put the following fractions $\frac{1}{4}, \frac{1}{5}, \frac{1}{2}, \frac{1}{3}$ in order from smallest to largest.

b) Complete the following:

    i) $\frac{3}{5} = \frac{?}{10}$
        ii) $\frac{2}{3} = \frac{?}{6} = \frac{?}{9}$

c) Change $\frac{14}{5}$ to a mixed number:

d) Change $4\frac{2}{7}$ to an improper fraction:

e) Calculate each of the following:

    i) $\frac{2}{7} + \frac{3}{7}$
    ii) $\frac{1}{2} + \frac{3}{5}$
    iii) $\frac{4}{5} - \frac{1}{5}$
    iv) $\frac{4}{5} - \frac{1}{3}$

    v) $\frac{1}{4} \times \frac{1}{3}$
    vi) $\frac{3}{4} \times \frac{2}{3}$
    vii) $\frac{1}{4} \div \frac{1}{3}$
    viii) $\frac{3}{4} \div \frac{2}{3}$

Question 2 (11 marks - 1 each)

a) Find the value of each of the following:

    i) $12 - 2 \times 3$
        ii) $2 \times 12 \div (3 + 1)$

b) Write an algebraic expression for each of the following:

    i) A number plus 7
        ii) A third of a number

c) Find the value of each of the following algebraic expressions given that x = 5 and y = 6.

    i) x + y
        ii) x − 2y

d) Write an algebraic expression for each of the following pairs:
Find the value of each algebraic expression using x= 7, y = 2.
Comment on the values obtained.

    i) y times x **and** x times y
    ii) x minus three **and** three minus by x

e) Find the value of each algebraic expression using x= 4, y = 3, z = 1.
Comment on the values obtained.

    i) (x + y) + z **and** x + (y + z)
    ii) (x − y) − z **and** x − (y − z)

f) The power output of a car speaker, in watts, is given by the formula:
Power = v×v÷R, where v is the car's voltage and R is the impedance of the speaker being used. What power is generated by a speaker with v = 12 volts, and R = 4 ohms?
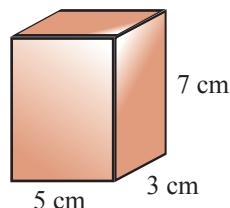
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Question 3 (8 marks)

a) Make the following unit conversions:

    i) 3.2 m^3 to cm^3 **ii)** 0.4 cm^3 to mm^3 **iii)**   5000 mL to L   **iv)**   0.25 L to mL   (1 each)

b) Find the volume of the following prism:

7 cm

3 cm

5 cm

(2)

c) A milk carton has a base of 10 cm by 15 cm and a height of 20 cm.
How many litres of milk will the carton hold ($1000 \text{ cm}^3 = 1 \text{ L}$)?   (2)

Question 4 (13 marks)

a) Arrange the integers in ascending order (smallest to largest): $^-3, 2, 0, {}^-1$ (1)
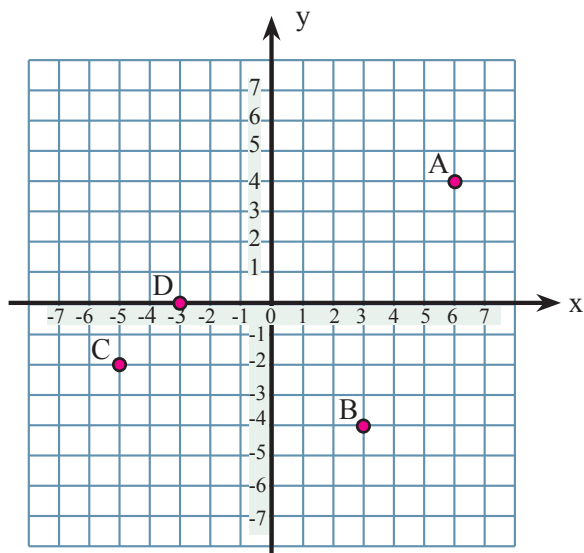
b) Calculate the following:

    i) $3 - 6$ **ii)** $^-5 + 4$ **iii)** $^-2 - 3$

    iv) $5 - {}^-2$ **v)** $^-2 - {}^-1$ **vi)** $7 + {}^-2 - {}^-2$ (1 each)

c) Plot the following points on the Cartesian plane and determine
if the pattern is linear: $(-2,5), (-1,-3), (0,-1), (1,1), (2,3)$.   (2)

d) Write the coordinates of each of the points in the graph below:

(1 each)

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