Carlingford High School

Mathematics

Year 7 Term 2 Examination

2020

Name: Solutions Class: 7 ___

Circle your teacher's name: Mrs Lobejko/Mrs Lego Mr Cheng
Mrs Wilson/Mrs Young Mrs Virmani
Mrs Blakeley/Mrs Sharma Mrs Tang
Mr Gong/Mrs Virmani Mr Wilson

Time allowed: 50 minutes

- Show all necessary working.
- Marks may be deducted for careless or untidy work.
- Complete the examination in blue or black pen.
- **Calculators may NOT be used.**

Topic	Integers	Fractions	Decimals	Problem Solving	Total
Total	/24	/30	/14	/2	/70

Section A: Integers (24 marks)

1. Which of the following is **NOT** an integer?

   A. -1 B. 0

   C. 100 D. 1.5

2. Starting at position -2 on a number line, move 5 places to the left and then 6 places to the right. Where is your final position on the number line?

   A. 13 B. -13

   C. -1 D. 1

3. What number must be subtracted from 4 to give -5?

   A. -9 B. 13

   C. 9 D. -1

4. Evaluate the following: [7]

   a) $-3+4=$ 1

   b) $100 \div (-2) =$ -50

   c) $-3 \times -5 =$ 15

   d) $16-60=$ -44

   e) $16 \times -4 =$ -64

   f) $-5+9-7=$ -3

   g) $(-5)^2=$ 25

5. Which of the following is correctly arranged in **descending** order:

   A. $-3, -7, 0, -5$

   B. $-18, -16, -12, -8$

   C. $8, -2, -6, -12$

   D. $-5, -12, -24, -20$

6. Evaluate the following expressions: [3]

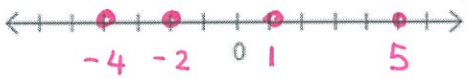
   a) $15 \times (-3) + 1 =$ -44

   b) $(63-85) \times (14-24) =$ 220

   c) $-3+[1-(10-6)] =$ -6

7. Plot the following on the number line below:

   $-2, 5, -4, 1$ [2]



-1 each mistake

8. Choose the correct symbol ($<$ *or* $>$) to make each of the expression below true. [2]

   a) -12 < -11

   b) $13+(-7)$ > 5

14

9. Insert grouping symbols to make the following number sentence true. [2]

$$-5 \times (-2 + 9) \times (7 + 3) = -350$$

(1) (1)

10. Mrs Lego was in a lift in a big department store. She started at ground level (level 0), she went up 4 floors for toys, then went 2 floors down for shoes and then up 3 levels to the cafeteria.

On which level was the cafeteria? [2]

$0 + 4 - 2 + 3 = 5$

$\therefore$ 5th floor

11. A maths competition consists of 20 multiple-choice questions, which are scored as follows:

- 3 points for every correct response
- 1 point is deducted for every incorrect response
- 2 points are deducted for every unanswered question

Emily answers 13 questions correctly, 2 incorrectly and left 5 unanswered. What is her score? [2]

$(13 \times 3) + (2 \times -1) + (5 \times -2)$

$= 39 - 2 - 10$

$= 27$

(1) for 39 marks.

Section B: Fractions (30 marks)

1. What is the reciprocal of $\frac{7}{9}$? [1]

$\frac{9}{7}$ or $1\frac{2}{7}$

2. Convert $8\frac{5}{6}$ to an improper fraction. [1]

$\frac{53}{6}$

3. Find equivalent fractions by completing the following: [2]

a) $\frac{5}{9} = \frac{20}{?}$? = _____

b) $\frac{21}{24} = \frac{?}{8}$? = _____

4. Arrange the following in **ascending** order: [1]

$\frac{1}{4}$, $\frac{2}{3}$, $\frac{5}{8}$

$\frac{6}{24}$ $\frac{16}{24}$ $\frac{15}{24}$

$\frac{1}{4}$, $\frac{5}{8}$, $\frac{2}{3}$

5. Evaluate the following. Express your answer in simplest form. **Show full working out.**

a) $\frac{1}{7} + \frac{3}{7} =$ $\frac{4}{7}$ [1]

b) $8 - \frac{3}{7} =$ $7\frac{4}{7}$ [1]

c) $\frac{3}{8} + \frac{1}{6} =$ $\frac{9}{24} + \frac{4}{24}$ (1) [2]

$= \frac{13}{24}$ (1)

d) $\frac{9}{14} - \frac{2}{7} =$ $\frac{9}{14} - \frac{4}{14}$ (1) [2]

$= \frac{5}{14}$ (1)

e) $1\frac{3}{4} + 3\frac{5}{12} =$ $4\frac{3}{4} + \frac{5}{12}$ [2]

$= 4\frac{9}{12} + \frac{5}{12}$

$= 4\frac{14}{12}$

$= 5\frac{2}{12}$ (1)

$= 5\frac{1}{6}$ (1)

6. Evaluate the following, giving your answer in simplest form. **Show full working.**

a) $\frac{7}{2} \times \frac{5}{3} =$ $\frac{35}{6}$ or $5\frac{5}{6}$ [1]

b) $\frac{33}{64} \times \frac{24}{66} =$ $\frac{3}{16}$ [1]

c) $\frac{3}{4} \div \frac{7}{2} =$ $\frac{3}{4} \times \frac{2}{7}$ [2]

$= \frac{6}{28}$ (1)

$= \frac{3}{14}$ (1)

d) $\frac{2}{3} \times \frac{1}{10} + \frac{3}{5} - \frac{1}{6} =$ [2]

$= \frac{2}{30} + \frac{3}{5} - \frac{1}{6}$

$= \frac{2}{30} + \frac{18}{30} - \frac{5}{30}$ (1)

$= \frac{15}{30}$

$= \frac{1}{2}$ (1)

7. Find $\frac{3}{10}$ of 2 km (in metres) [2]

$\frac{3}{10} \times 2000\,m$

$= 600\,m$

(1) 2000m

8. Which figure below has $\frac{3}{7}$ shaded ?

A.

B.

C.

D.

9. On Tuesday night 312 students attended a dance. This is exactly $\frac{1}{3}$ of the school.

a) How many students belong to the school? [1]

$312 \times 3 = 936$

b) How many students did not attend the dance? [1]

$936 - 312$

$= 624$

10. Lionel has \$54. He spends \$25 on a new shirt and \$11 on lunch. What fraction of his money remains? [2]

$54 - 25 - 11 = 18$ (1)

$\frac{18}{54}$ or $\frac{1}{3}$ (1)

11. The product of two numbers is $4\frac{1}{3}$.
If one of the numbers is $1\frac{5}{8}$, find the other number? [2]

$4\frac{1}{3} \div 1\frac{5}{8}$ (1)

$= \frac{13}{3} \times \frac{8}{13}$

$= \frac{8}{3}$ or $2\frac{2}{3}$ (1)

12. Sarah bought two full bags of sand. Both bags had the same amount of sand in them. After she used $\frac{1}{4}$ of one bag of sand, she had a total of 35 kilograms of sand left.

How many kilograms of sand were in one full bag? [2]

(1) $1\frac{3}{4} = 35$ kg

$\frac{7}{4} = 35$ kg

$35 \div \frac{7}{4}$

$= 35 \times \frac{4}{7}$

$= 20$ kg (1)

Section C: Decimals (14 marks)

1. Which of the following statements is **wrong**?

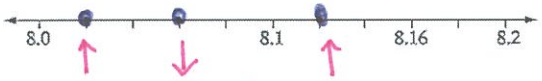
A. $1.909 < 1.99$

B. $0.07 > 0.069$

C. $16.859 < 16.86$

(D.) $24.923 > 24.93$

2. Write the values of the points marked with dots on the number line below. [2]



8.02 8.06 8.12

-1 each mistake

3. How many decimal places does 1.635 have? [1]

3

4. Convert each decimal to a simplified fraction.

a) $0.07 = \frac{7}{100}$ [1]

b) $2.85 = 2\frac{85}{100}$ (1) [2]

$= 2\frac{17}{20}$ (1)

5. Evaluate the following. [2]

a)
$$\begin{array}{r} 5.3 \\ 6.2 \\ +0.5 \\ \hline 12.0 \end{array}$$

b)
$$\begin{array}{r} 22.60 \\ -13.54 \\ \hline 9.06 \end{array}$$

6. Evaluate each expression below.

a) $43.123 \times 10 =$ 431.23 [1]

b) $20.757 \div 10000 =$ [1]

0.0020757

7. Georgina pays for $36.35 worth of groceries with a $100 note. How much change should she receive? [1]

$$\begin{array}{r} 100.00 \\ -\ 36.35 \\ \hline \$63.65 \end{array}$$

8. The cost of a train ticket is $11.60 for an adult and $8.96 for a child. Find the cost of tickets for 1 adult and 2 children. [2]

$$\begin{array}{r} 11.60 \\ 8.96 \\ +\ 8.96 \\ \hline \$29.52 \end{array}$$

(1) $17.92

Problem Solving : (2 marks) * units question.

David took a walk around a park twice. He took 12.4 minutes to walk the first round. In the second round, he took 3.2 fewer minutes than he did the first round.

How long did David take to complete his walk altogether?

(1)

$12.4 + (12.4 - 3.2)$

$= 12.4 + 9.2$

$= 21.6$ minutes.

must have units