



The National  
Orthodox School  
Shmaisani

Mark

40

Subject: Mathematics

First Exam / First Semester

Name: Answers

Grade-Section: 8 CS ( )

Date: 3 / 10 / 2022

Duration: 1 hour

**READ THESE INSTRUCTIONS FIRST.**

Write candidate name, class and section in the spaces provided above.

Write in dark blue or black pen.

You may use a soft pencil for any diagrams, graphs or rough working.

Do not use staples, paper clips, highlighters, and glue or correction fluid.

Number of pages: 8

Answer all questions. Number of questions: 6

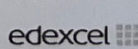
The number of marks is given at the beginning of each question or part question.

QUESTION NUMBER	MARK SCHEME
1	12
2	7
3	6
4	4
5	4
6	7
<b>TOTAL</b>	<b>40</b>

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Question 1

12 marks

Work out the following without using a calculator.

Show all the steps of your working and give your answer as a fraction in its simplest form.

a)  $4\frac{2}{5} - 2\frac{2}{3} + \frac{1}{3} =$

$$\frac{22}{5} - \frac{8}{3} + \frac{1}{3} =$$

$$\frac{22 \times 3}{5 \times 3} - \frac{7 \times 5}{3 \times 5} =$$

$$\frac{66}{15} - \frac{35}{15} = \frac{31}{15} = 2\frac{1}{15}$$

b)  $-2\frac{3}{5} \times 1\frac{2}{13} =$

$$-\frac{13}{5} \times \frac{15}{13} = -3$$

c)  $2\frac{2}{3} \div 1\frac{1}{5} =$

$$\frac{8}{3} \div \frac{6}{5} =$$

$$4\frac{8}{3} \times \frac{5}{6} = \frac{20}{9} = 2\frac{2}{9}$$

d)  $\frac{3}{5}$  of  $2\frac{1}{5}$  kg =

$$\frac{3}{5} \times \frac{11}{5} = \frac{33}{25} = 1\frac{8}{25} \text{ kg}$$

b) Find the HCF of 80 and 125

e)  $4 \times 3 + (3\frac{1}{2})^2 =$

$$4 \times 3 + (\frac{7}{2})^2 =$$

$$4 \times 3 + \frac{49}{4} =$$

$$12 + \frac{49}{4} =$$

$$12 + 12\frac{1}{4} = 24\frac{1}{4}$$

f)  $(1 - \frac{3}{5}) \div (1 - \frac{5}{9}) =$

$$(\frac{5}{5} - \frac{3}{5}) \div (\frac{9}{9} - \frac{5}{9}) =$$

$$\frac{2}{5} \div \frac{4}{9} =$$

$$\frac{2}{5} \times \frac{9}{4} = \frac{9}{10}$$

**Question 2**

**7 marks**

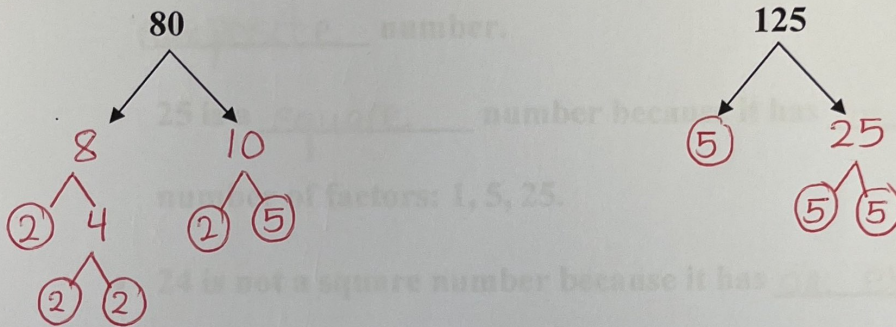
a) Find the factors of 54

2 marks

Factors of 54 are: 1, 2, 3, 6, 9, 18, 27, 54

b) Find the HCF of 80 and 125

5 marks



$80 = 2 \times 2 \times 2 \times 2 \times 5 = 2^4 \times 5$

$125 = 5 \times 5 \times 5 = 5^3$

HCF = 5

Question 3

6 marks

Choose from the cards to complete these sentences:

an odd	an even	composite
square	1, 3 and 9	only two factors

- We can tell a number is prime because it has only two factors
- 9 is not prime because it has 1, 3 and 9 as its factors. 9 is a composite number.
- 25 is a square number because it has an odd number of factors: 1, 5, 25.
- 24 is not a square number because it has an even number of factors.

Question 4

4 marks

Convert these fractions to decimals. Use the correct dot notation for any recurring decimals.

a)  $\frac{1}{3} = \underline{0.\dot{3}}$

b)  $6\frac{2}{11} = \underline{6.\dot{1}\dot{8}}$

c)  $\frac{168}{25} = \underline{6.72}$

d)  $\frac{2}{15} = \underline{0.\dot{1}\dot{3}}$

**Question 5**

**4 marks**

a)  $\frac{1}{99} = 0.\dot{0}1$

Use the fact above to convert  $\frac{7}{99}$  to a recurring decimal.

Show your work!

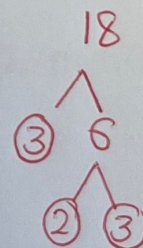
Do not use a calculator.

$$\begin{aligned}\frac{7}{99} &= 7 \times \frac{1}{99} \\ &= 7 \times 0.\dot{0}1 \\ &= 0.\dot{0}7\end{aligned}$$

b) Decide whether the fraction  $\frac{5}{18}$  will be equivalent to a recurring decimal or a terminating decimal. Explain why!

Do not use a calculator.

$$\frac{5}{18} = \frac{5}{2 \times 3 \times 3}$$



The denominator  $18 = 2 \times 3^2$   
As there is a number other than 2 and 5 in the product of primes, it will be a recurring decimal.

**Question 6**

7 marks

Yasma wants to paint a wall. The wall is a rectangle measuring  $7\frac{1}{2}$  m by  $5\frac{2}{5}$  m.

Each can of paint covers  $5 \text{ m}^2$  of wall.

Each can of paint costs \$10.25

a) What is the area of the wall?

3 marks

$$\begin{aligned} A &= 7\frac{1}{2} \times 5\frac{2}{5} \\ &= \frac{15}{2} \times \frac{27}{5} = \frac{81}{2} = 40\frac{1}{2} \text{ m}^2 \end{aligned}$$

b) How many cans of paint does Yasma need?

2 marks

$$40\frac{1}{2} \div 5 = \frac{81}{2} \times \frac{1}{5} = \frac{81}{10} = 8\frac{1}{10} \rightarrow 9 \text{ cans of paint.}$$

c) How much will it cost for Yasma to paint the wall?

2 marks

$$9 \times 10.25 = \$92.25$$

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