



Subject: Mathematics

First Exam / Remedial Plan

Name: Answers

Grade-Section: 8 CS

Date:

Teacher: Zain Hattar

Objective: Revise factors, fractions, order of operations and recurring decimals.

Question 1

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.

<p>a) $6\frac{2 \times 2}{5 \times 2} + 4\frac{1 \times 5}{2 \times 5} =$</p> <p>$= 6\frac{4}{10} + 4\frac{5}{10}$</p> <p>$= 10\frac{9}{10}$</p>	<p>b) $9\frac{1}{5} - 3\frac{3}{4} =$</p> <p>$= \frac{46 \times 4}{5 \times 4} - \frac{15 \times 5}{4 \times 5}$</p> <p>$= \frac{184}{20} - \frac{75}{20}$</p> <p>$= \frac{109}{20} = 5\frac{9}{20}$</p>
<p>c) $2 \times 5 + (4\frac{1}{5})^2 =$</p> <p>$10 + \frac{21}{5} \times \frac{21}{5} =$</p> <p>$10 + \frac{441}{25} =$</p> <p>$10 + 17\frac{16}{25} =$</p> <p>$27\frac{16}{25}$</p>	<p>d) $(2\frac{1}{3})^2 =$</p> <p>$(\frac{7}{3})^2 = \frac{7}{3} \times \frac{7}{3}$</p> <p>$= \frac{49}{9} = 5\frac{4}{9}$</p>



$$e) -\frac{5}{17}x - 5\frac{2}{3} =$$

$$-\frac{5}{17}x - \frac{17}{3} = +\frac{5}{3}$$

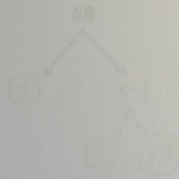
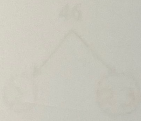
$$\text{Factors of 17} = 1, 17$$

$$f) -1\frac{1}{4}x + 2\frac{2}{3} =$$

$$-\frac{5}{4}x + \frac{8}{3} = -\frac{10}{3}$$

$$= -3\frac{1}{3}$$

b) Find the HCF of 46 and 68



$$g) 8\frac{3}{4} \div 3\frac{1}{2} =$$

$$= \frac{35}{4} \div \frac{7}{2}$$

$$= \frac{5}{2} \frac{35}{4} \times \frac{2}{7}$$

$$= \frac{5}{2} = 2\frac{1}{2}$$

$$h) \frac{5}{6}x \left(\frac{2x^3}{4x^3} - \frac{1x^4}{3x^4} \right) - \frac{1}{36} =$$

$$= \frac{5}{6}x \left(\frac{6}{12} - \frac{4}{12} \right) - \frac{1}{36}$$

$$= \frac{5}{8}x \frac{2}{12} - \frac{1}{36}$$

$$= \frac{5}{36} - \frac{1}{36}$$

$$= \frac{4}{36} = \frac{1}{9}$$

Question 2

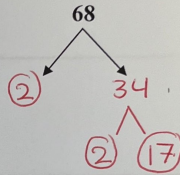
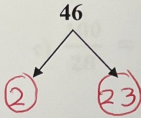
Convert these fractions to decimals. Use the correct dot notation for any recurring decimals.

a) Find the factors of 190

Factors of 190 are:

1, 2, 5, 10, 19, 38, 95, 190

b) Find the HCF of 46 and 68



Question 4

a) $\frac{1}{99} = 0.01$

Use the fact above to convert $\frac{1}{99}$ to a recurring decimal.

46 = 2 x 23

68 = 2² x 17

HCF = 2

Question 3

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

a) $\frac{2}{9} = 0.\dot{2}$

b) $8\frac{7}{11} = 8.6\dot{3}$

c) $\frac{100}{28} = 3.\dot{5}7142\dot{8}$

d) $\frac{4}{16} = 0.25$

Question 4

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

Use the fact above to convert $\frac{5}{99}$ to a recurring decimal.

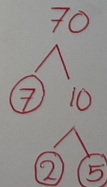
Show your work!

$$\frac{5}{99} = \frac{1}{99} \times 5 = 0.\dot{0}1 \times 5 = 0.\dot{0}5$$

b) Decide whether the fraction $\frac{2}{140}$ will be equivalent to a recurring decimal or a terminating decimal. Explain why!

$$\frac{2}{140} \stackrel{\div 2}{=} \frac{1}{70}$$

$$70 = 2 \times 5 \times 7$$



There is a number other than 2 and 5, then it is a recurring decimal.

Question 5

- a) There are 96 children in a room, 40 of them are girls. Find the fraction of the children that are boys. Write your answer in its simplest form.

96 children $\begin{cases} \swarrow 40 \text{ girls} \\ \searrow ? \text{ boys} \end{cases}$

$$96 - 40 = 56 \text{ boys}$$

$$\frac{56 \div 8}{96 \div 8} = \frac{7}{12}$$

- b) A two litres jug is filled with water. It is used to fill two cups, one holding $\frac{1}{5}$ litre and the other $\frac{3}{8}$ litre. How much water remains in the jug?

$$\begin{aligned} &= 2 - \left(\frac{1 \times 8}{5 \times 8} + \frac{3 \times 5}{8 \times 5} \right) \\ &= 2 - \left(\frac{8}{40} + \frac{15}{40} \right) \\ &= \frac{2 \times 40}{1 \times 40} - \frac{23}{40} \\ &= \frac{80}{40} - \frac{23}{40} = \frac{57}{40} = 1 \frac{17}{40} \text{ L} \end{aligned}$$

- c) A piece of wood is $6 \frac{1}{4}$ metres long. How many $1 \frac{1}{2}$ metre strips can be cut from it?

$$6 \frac{1}{4} \div 1 \frac{1}{2} = \frac{25}{4} \div \frac{3}{2} =$$

$$\frac{25}{4} \times \frac{2^1}{3} = \frac{25}{6} = 4 \frac{1}{6} \rightarrow 4 \text{ strips.}$$

KCF

- d) Lian earned \$585 last month; she spent $\frac{5}{9}$ of the money to buy a laptop. How much money is left with Lian?

$$\frac{9}{9} - \frac{5}{9} = \frac{4}{9} \text{ left}$$

$$\frac{4}{9} \times 585 = \frac{2340}{9} = \$260$$

- e) The area of a rectangle is $8\frac{3}{4} \text{ cm}^2$. What is the length if its width is $2\frac{1}{2} \text{ cm}$?

$$A_{\text{rectangle}} = L \times W$$

$$L = \underset{\text{rectangle}}{A} \div W$$

$$\begin{aligned} L &= 8\frac{3}{4} \div 2\frac{1}{2} \\ &= \frac{35}{4} \div \frac{5}{2} = \frac{35}{4} \times \frac{2}{5} = \frac{7}{2} = 3\frac{1}{2} \text{ cm} \end{aligned}$$

**NEVER
NEVER
NEVER
NEVER
GIVE
UP**