

**SMART EXAM RESOURCES**  
**0580 IGCSE MATH EXTENDED**  
**TOPIC: NUMBERS**  
**SUB-TOPIC: PROVING LHS =RHS**  
**SET-1-QP-MS**

1 Show that  $1\frac{5}{9} \div 1\frac{7}{9} = \frac{7}{8}$ .

Write down all the steps in your working.

*Answer*

[2]

**MARK SCHEME:**

Working must be shown	<b>2</b>	<b>M1</b> $\frac{14}{9}$ and $\frac{16}{9}$ <b>M1</b> $\frac{14}{16} = \frac{7}{8}$ oe or visible cancelling
-----------------------	----------	---

2 (a) Find the value of  $x$  when  $\frac{18}{24} = \frac{27}{x}$ .

Answer(a)  $x = \dots\dots\dots$  [1]

(b) Show that  $\frac{2}{3} \div 1\frac{1}{6} = \frac{4}{7}$ .

Write down all the steps in your working.

Answer(b)

[2]

**MARK SCHEME:**

(a)	36	1	
(b)	correct working	2	<b>M1</b> for $\frac{7}{6}$ oe improper fraction <b>M1</b> for $\frac{12}{21} = \frac{4}{7}$ oe or visible cancelling

3 Show that  $1\frac{1}{2} \div \frac{3}{16} = 8$ .

Do not use a calculator and show all the steps of your working.

*Answer*

**MARK SCHEME:**

	correct working; e.g. $\frac{3k}{2k} \times \frac{16n}{3n} = 8$	<b>2</b>	<b>M1</b> for $\frac{3k}{2k}$ and <b>A1</b> for $\frac{3k}{2k} \times \frac{16n}{3n} = 8$
--	--	----------	--

4 Show that  $\frac{7}{27} + 1\frac{7}{9} = 2\frac{1}{27}$ .

Write down all the steps in your working.

*Answer*

[2]

**MARK SCHEME:**

Answer given so only working scores marks	2	<b>M1</b> $7/27 + 48/27$ or $7/27 + (1)21/27$ <b>M1</b> completely correct finish
---	---	--

5 Show that  $3\frac{3}{4} + 1\frac{1}{3} = 5\frac{1}{12}$ .

Write down all the steps in your working.

*Answer*

[2]

**MARK SCHEME:**

Correct working	2	<b>M1</b> $\frac{15}{4} + \frac{4}{3} = \frac{45}{12} + \frac{16}{12}$ <b>M1</b> $\frac{61}{12} = 5\frac{1}{12}$
-----------------	---	---

6 Write down all the working to show that  $\frac{3\frac{2}{5} + \frac{2}{3}}{\frac{3}{5} \times \frac{2}{3}} = 3\frac{1}{6}$ .

*Answer*

[3]

**MARK SCHEME:**

Answer given	3	<b>M1</b> $\frac{19}{15}$ <b>M1</b> $\frac{6}{15}$ or $\times \frac{15}{6}$ seen <b>E1</b> $= \frac{19}{6} = 3\frac{1}{6}$
--------------	---	---

7 Jiwan incorrectly wrote  $1 + \frac{1}{2} + \frac{1}{3} + \frac{1}{4} = 1\frac{3}{9}$ .

Show the correct working and write down the answer as a mixed number.

*Answer* ..... [3]

**MARK SCHEME:**

$2\frac{1}{12}$ cao with correct working	<b>3</b>	<b>M1</b> (1+) $\frac{6}{12} + \frac{4}{12} + \frac{3}{12}$ oe <b>A1</b> (1) $\frac{13}{12}$ or $\frac{25}{12}$ oe
--	----------	--

8 Show that  $3^{-2} + 2^{-2} = \frac{13}{36}$ .

Write down all the steps of your working.

*Answer*

[2]

**MARK SCHEME:**

$\frac{1}{9}, \frac{1}{4}$ $\left(\frac{1}{9} + \frac{1}{4} = \right) \frac{4}{36} + \frac{9}{36} = \frac{13}{36}$	<b>M1</b> Both fractions seen <b>E1</b> Both fractions over a common denominator and added to give $\frac{13}{36}$
---	---

9 Write down all your working to show that the following statement is correct.

$$\frac{1 + \frac{8}{9}}{2 + \frac{1}{2}} = \frac{34}{45}$$

*Answer*

[2]

**MARK SCHEME:**

$\frac{\frac{17}{9}}{\frac{5}{2}} \text{ or } \frac{17}{9} \div \frac{5}{2}$	<b>M1</b>	$\frac{\frac{34}{18}}{\frac{45}{18}} \text{ or } \frac{34}{18} \div \frac{45}{18}$
$\frac{17}{9} \times \frac{2}{5} = \frac{34}{45}$	<b>M1</b>	$\frac{34}{18} \times \frac{18}{45} = \frac{34}{45}$

10 Show that  $\left(\frac{1}{10}\right)^2 + \left(\frac{2}{5}\right)^2 = 0.17$ .

Write down all the steps in your working.

*Answer*

[2]

**MARK SCHEME:**

$\frac{1}{100} + \frac{4}{25}$ or $0.1^2 + 0.4^2$ oe	<b>M1</b>	
$\frac{1}{100} + \frac{16}{100} = 0.17$ or $0.01 + 0.16 = 0.17$	<b>M1</b>	Independent

11 Without using a calculator, show that  $\left(\frac{49}{16}\right)^{-\frac{3}{2}} = \frac{64}{343}$ .

Write down all the steps in your working.

*Answer*

[2]

**MARK SCHEME:**

Correct working seen	<b>2</b>	<b>M1</b> for correct step <b>M1</b> for correct step
----------------------	----------	---