

SMART EXAM RESOURCES

0580 EXTENDED MATH

TOPIC: NUMBERS

SUB-TOPIC: THE FOUR OPERATIONS

[BODMAS] SET-1-QP-MS

1 Without using your calculator, work out $\frac{5}{6} - \left(\frac{1}{2} \times 1\frac{1}{2}\right)$.

Write down all the steps of your working.

Answer [3]

MARK SCHEME:

	$\left[\frac{1}{2} \times 1\frac{1}{2} = \right] \frac{3}{4}$ oe	B1	
	$\frac{5 \times 2}{6 \times 2}$ and $\frac{3 \times 3}{4 \times 3}$ oe or better	M1FT	
	$\frac{1}{12}$ oe working must be shown	A1	

2 Without using your calculator, work out $\frac{11}{12} - \left(\frac{3}{4} - \frac{2}{3}\right)$.

You must show all your working and give your answer as a fraction in its simplest form.

..... [4]

MARK SCHEME:

common denominator 12	B1	accept $k \times 12$ throughout
one correct from $\frac{9}{12}$ or $\frac{8}{12}$ oe	M1	accept $\frac{9k}{12k}$ or $\frac{8k}{12k}$
$\frac{5}{6}$ cao	A2	A1 for $\frac{10}{12}$ or $\frac{10k}{12k}$

3 Work out

$$\frac{2 + 12}{4 + 3 \times 8}$$

Answer [1]

MARK SCHEME:

0.5 or $\frac{1}{2}$ c.a.o.	1	
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4 Work out $2(3 \times 10^8 - 4 \times 10^6)$, giving your answer in standard form.

Answer [2]

MARK SCHEME:

5.92×10^8	2	M1 figs 592 on answer line or M1 296×10^6 oe in working
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5 Use a calculator to work out the following.

(a) $3(-4 \times 6^2 - 5)$

Answer(a) [1]

(b) $\sqrt{3} \times \tan 30^\circ + \sqrt{2} \times \sin 45^\circ$

Answer(b) [1]

MARK SCHEME:

(a) -447	1	
(b) 2	1	

- 6 Work out $2.5 \times 10^8 \times 2 \times 10^{-2}$.
Give your answer in standard form.

Answer(b) [2]

MARK SCHEME:

5×10^6

2

B1 for 5 000 000 oe or B1 for answer $k \times 10^6$ or 5×10^k
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- 7 Work out $4 \times 10^{-5} \times 6 \times 10^{12}$.
Give your answer in standard form.

Answer [2]

MARK SCHEME:

	2.4×10^8	2	B1 for 240 000 000 oe or B1 for $k \times 10^8$ or 2.4×10^k
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- 8 Work out $(6.4 \times 10^7) + (9.6 \times 10^6)$.
Give your answer in standard form.

.....[2]

MARK SCHEME:

7.36×10^7	2	B1 for figs 736
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9 Calculate.

$$\frac{16.379 - 0.879}{4.2} \times 1.241$$

Give your answer correct to 2 significant figures.

..... [2]

MARK SCHEME:

4.6 cao nfw	2	B1 for 4.57 or 4.58 or 4.579 to 4.580 If 0 scored, SC1 for their calculation rounded to 2 sf if more than 2sf seen
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Without using your calculator, work out $\frac{3}{4} + \frac{2}{3} - \frac{1}{8}$.

You must show all your working and give your answer as a mixed number in its simplest form.

..... [4]

MARK SCHEME:

Common denominator 24	B1	accept $k \times 24$
Two correct from $\frac{18}{24}$, $\frac{16}{24}$ and $\frac{3}{24}$ oe	M1	accept $\frac{18k}{24k}$, $\frac{16k}{24k}$ and $\frac{3k}{24k}$
$1\frac{7}{24}$ cao	A2	A1 for $\frac{31}{24}$ or $\frac{31k}{24k}$ or $1\frac{7k}{24k}$