

**SMART EXAM RESOURCES**  
**0580 EXTENDED MATH**  
**TOPIC: NUMBERS**  
**SUB-TOPIC: SIGNIFICANT FIGURES**  
**SET-2-QP-MS**

1 Write 23.4571 correct to

(a) 4 significant figures,

..... [1]

(b) the nearest 10.

..... [1]

**MARK SCHEME:**

(a)	23.46 cao	1	
(b)	20 cao	1	

2 Write 0.071 64 correct to 2 significant figures.

..... [1]

**MARK SCHEME:**

[0].072	<b>1</b>	
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- 3 Marcel invests \$2500 for 3 years at a rate of 1.6% per year simple interest.  
 Jacques invests \$2000 for 3 years at a rate of  $x\%$  per year compound interest.  
 At the end of the 3 years Marcel and Jacques receive the same amount of interest.

Calculate the value of  $x$  correct to 3 significant figures.

$x = \dots\dots\dots [5]$

**MARK SCHEME:**

1.96 cao	<b>5</b>	<p><b>M4</b> for <math>\left( \left( \sqrt[3]{\frac{\frac{2500 \times 1.6 \times 3}{100} + 2000}{2000}} - 1 \right) - 1 \right) [\times 100]</math> oe or 1.96... or [0].0196... or 101.96... or 1.0196...          or</p> <p><b>M3</b> for <math>\sqrt[3]{\frac{\frac{2500 \times 1.6 \times 3}{100} + 2000}{2000}}</math>          or</p> <p><b>B2</b> for [SI =] 120 or [CI total=] 2120          or <b>M1</b> for <math>\frac{2500 \times 3 \times 1.6}{100}</math>          and</p> <p><b>M1</b> for <math>2000 \times (k)^3</math></p>
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4 (a) Write 209 802 correct to the nearest thousand.

..... [1]

(b) Write 4123 correct to 3 significant figures.

..... [1]

**MARK SCHEME:**

(a)	210 000 cao	1	
(b)	4120 cao	1	

5 (a) Write 0.047 883 correct to 2 significant figures.

..... [1]

(b) Write 0.005 27 in standard form.

..... [1]

**MARK SCHEME:**

(a)	0.048 cao	<b>1</b>	
(b)	$5.27 \times 10^{-3}$	<b>1</b>	

6 Write the number 2381.597 correct to

(a) 3 significant figures,

Answer(a) ..... [1]

(b) 2 decimal places,

Answer(b) ..... [1]

(c) the nearest hundred.

Answer(c) ..... [1]

**MARK SCHEME:**

<b>(a)</b>	238 <u>0</u>	<b>1</b>	
<b>(b)</b>	2381.6 <u>0</u>	<b>1</b>	
<b>(c)</b>	2400	<b>1</b>	

7 The mass of the Earth is  $\frac{1}{95}$  of the mass of the planet Saturn.

The mass of the Earth is  $5.97 \times 10^{24}$  kilograms.

Calculate the mass of the planet Saturn, giving your answer in standard form, correct to 2 significant figures.

*Answer*

kg [3]

**MARK SCHEME:**

$5.7 \times 10^{26}$	<b>3*</b>	<b>M1 x 95 A1 5.7 B1 <math>10^{26}</math></b>
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8

$$p = \frac{0.002751 \times 3400}{(9.8923 + 24.7777)^2}$$

(a) In the spaces provided, write each number in this calculation correct to 1 significant figure.

Answer(a)  $\frac{\text{.....} \times \text{.....}}{(\text{.....} + \text{.....})^2}$  [1]

(b) Use your answer to part (a) to estimate the value of  $p$ .

Answer(b) [1]

**MARK SCHEME:**

(a) $\frac{0.003 \times 3000}{(10 + 20)^2}$ cao	1	No extra zeros allowed. Accept standard form
(b) 0.01 or 1/100	1	<b>SC1</b> for answer 0 if 0 is used for 0.003 in (a)



- 9 Write each number correct to 1 significant figure and estimate the value of the calculation.  
You must show your working.

$$2.65 \times 4.1758 + 7.917$$

*Answer* ..... [2]

**MARK SCHEME:**

20 (but 3, 4 and 8 must be seen www)	2	M1 3, 4 and 8 seen www
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10

Write 0.00658

(a) in standard form,

Answer(a) ..... [1]

(b) correct to 2 significant figures.

Answer(b) ..... [1]

**MARK SCHEME:**

(a) $6.58 \times 10^{-3}$	1	× and 10 essential
(b) 0.00 <u>66</u> cao	1	Allow $6.6 \times 10^{-3}$