

Q1. (a) Write 3.9 to the nearest whole number.

.....

(1)

(b) Write down the square of 4.

.....

(1)

(Total 2 marks)

Q2. (a) Find the square of 6.

.....

(1)

(b) Find the square root of 225.

.....

(1)

(c) Find the value of 10^3 .

.....

(1)
(Total 3 marks)

Q3. (a) Find the square root of 196.

.....

(1)

(b) Find the cube of 7.

.....

(1)
(Total 2 marks)

Q4. (a) Work out the square of 3

.....

(1)

(b) Work out the value of 2^6

.....

(1)

- (c) Write 80% as a fraction.
Give your answer in its simplest form.

.....

(2)

- (d) Work out 10% of £320

£

(2)

- (e) Write these numbers in order of size.
Start with the smallest number.

$\frac{2}{5}$ 45% 0.35 $\frac{3}{8}$

.....

(2)

(Total 8 marks)

Q5. Here is a list of numbers.

2 4 5 6 7 8

From the list of numbers write down

(i) an odd number

.....

(ii) a square number

.....

(iii) a multiple of 3

.....

(iv) a factor of 10

.....

(Total 4 marks)**Q6.** Use a calculator to work out

$$\sqrt{2.56} + 8.4$$

.....

(Total 2 marks)**Q7.** Here is a list of 8 numbers.

3 5 6 8 9 10 11 16

From the list, write down

- (a) **two** odd numbers,

..... and

(1)

- (b) **two** numbers with a sum of 15

..... and

(1)

- (c) a factor of 12

.....

(1)

- (d) a multiple of 4

.....

(1)

James says that 10 is a square number because $5^2 = 10$

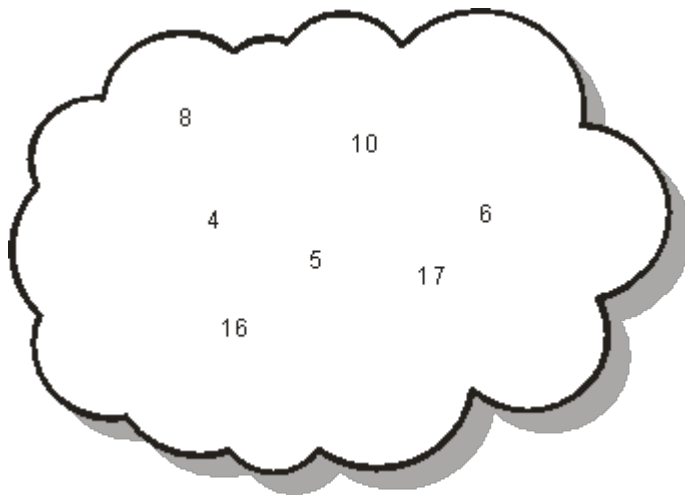
- (e) James is wrong.
Explain why.

.....
.....

(1)

(Total 5 marks)

Q8.



Using only the numbers in the cloud, write down

(i) an odd number

.....

(ii) a multiple of 4

.....

(iii) two numbers which have a sum which is a prime number

.....

(iv) the value of 2^3

.....

(Total 4 marks)

M1.

	Answer	Mark	Additional Guidance
(a)	4	1	B1 accept 4.0(0)
(b)	16	1	B1
Total for Question: 2 marks			

M2.

	Answer	Mark	Additional Guidance
(a)	36	1	B1 cao accept answer in words, ignore spelling
(b)	15	1	B1 cao accept answer in words, ignore spelling
(c)	1000	1	B1 cao accept answer in words, ignore spelling
Total for Question: 3 marks			

M3.

	Working	Answer	Mark	Additional Guidance
(a)		14	1	B1 for 14 cao

(b)	$7 \times 7 \times 7$	343	1	B1 for 343 cao
Total for Question: 2 marks				

M4.

	Answer	Mark	Additional Guidance
(a)	9	1	B1 cao
(b)	64	1	B1 cao
(c)	$\frac{4}{5}$	2	B2 for 4/5 (B1 for 80/100 oe or 0.8)
(d)	£32	2	M1 for $10/100 \times 320$, or $320 \div 10$ A1 cao NB: £320-£32=£288 or £320+£32=£352 can be awarded M1 A1 , but £288 or £352 without working award B1
(e)	0.35, $\frac{3}{8}$ $\frac{2}{5}$, 45%	2	B2 all correct, or for equivalents in order: 0.35, 0.375, 0.4, 0.45, or for a mixture of equivalents as long as the order is correct. (B1 one error of misplacing numbers, or correct conversion to decimals or %, or correct order but reversed). NB: accept 0.38 or 0.37 instead of 0.375 for B1 , but not B2
Total for Question: 8 marks			

M5.

	Answer	Mark	Additional Guidance
(i)	5 or 7	4	B1 5 or 7
(ii)	4		B1 cao
(iii)	6		B1 cao
(iv)	2 or 5		B1 2 or 5
Total for Question: 4 marks			

M6.

Working	Answer	Mark	Additional Guidance
$1.6 + 8.4$	10	2	B2 for 10 (B1 for sight of 1.6)
Total for Question: 2 marks			

M7.

	Answer	Mark	Additional Guidance
(a)	Two of 3, 5, 9, 11	1	B1 cao
(b)	5, 10 or 6,9	1	B1 cao
(c)	3 or 6	1	B1 for 3 or 6

(d)	8 or 16	1	B1 for 8 or 16
(e)	e.g. " $5^2 = 25$ "	1	B1 for correct explanation, e.g. $5^2 = 25$ or $3^2 = 9$ and $4^2 = 16$ so 10 cannot be a square number or showing diagrammatically that 10 is not a square number
Total for Question: 5 marks			

M8.

	Working	Answer	Mark	Additional Guidance
(i)		5 or 17	1	B1 5 or 17 or both
(ii)		4, 8, or 16	1	B1 for one, two or three of 4, 8 or 16
(iii)		5 and 6	1	B1 5 and 6 oe
(iv)		8	1	B1 cao
Total for Question: 4 marks				

- E1.** Part (a) of this question was well understood with 93 % of candidates scored the mark for either 4, 4.0 or 4.00 whilst part (b) was less well understood as only 52% of candidates scored the marks; 2 and 8 were common wrong answers.
- E2.** This question tested whether candidates understood the concept of powers and roots. Whilst 67% could find the square of 6 only 43% could find the square root of 225 and even fewer (41%) could find the value of 10^3 . This was an indication of the size of the lack of calculator problem.
- E3.** 55% of candidates were able to give the correct answer in part (a) of this question. Common incorrect responses included “98” and “38416” presumably obtained by dividing by 2 and squaring respectively. In part (b) just under 36% of candidates gave the correct answer. “21” was the most common incorrect answer seen.
- E4.** The success rate in parts (a) & (b) in this question was related to that of question 2(ii), about half the candidates gaining the mark, with many lacking an understanding of square numbers or indices. In part (c) most were able to express the fraction as $\frac{80}{100}$, but of these half were then unable to cancel the fraction into its simplest form.
- Candidates used a variety of methods in part (d), with many realising that a division by 10, or “10p in the £” would lead to the correct answer.
- Candidates found part (e) far more challenging. The most successful method appeared to be conversion to decimals.

- E5.** Most parts of this question were well attempted, but in part (ii) performance was poor, with many candidates unable to identify the “4” from the list as the square number.
- E6.** Although the correct answer of 10 was often seen (in 54% of the cases), there were many who just wrote 10.96 (the sum of 2.56 and 8.4) or 3.31 (the square root of 10.96). Others wrote $14.9536 (= 2.56^2 + 8.4)$.
- E7.** 95% of candidates could identify 2 odd numbers from the list given and the great majority could identify a pair of numbers whose sum was 15 though some gave the pair whose product was 15. Parts (c) and (d) of the question were also well answered though some candidates gave 4, a number which did not appear in the list given, as a factor of 12. Explanations given in part (e) were generally correct, clear and succinct. The main loss of marks in this part was due to attempts to explain that square numbers “go into themselves” or confusion between the terms square and prime.