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# Chapter 1

## Numbers

1. 0980\_p20\_qp\_10 Q: 1

Write seventeen thousand and seventeen in figures.

..... [1]

---

2. 0980\_p20\_qp\_10 Q: 17

Explain why  $\sqrt{3}$  is irrational.

..... [1]

---

3. 0980\_s20\_qp\_12 Q: 3

Write down the reciprocal of 10.

..... [1]

---

4. 0980\_s20\_qp\_12 Q: 11

Write down

(a) a square number greater than 10,

..... [1]

(b) an irrational number.

..... [1]

---

5. 0980\_s20\_qp\_12 Q: 22

(a) Write down all the factors of 28.

..... [2]

(b) Write 54 as a product of its prime factors.

..... [2]

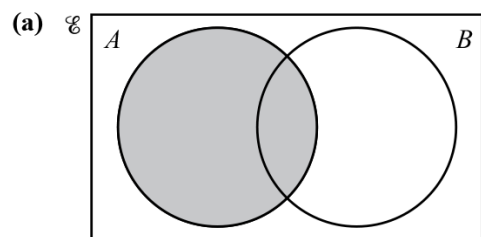
(c) Find the lowest common multiple (LCM) of 48 and 60.

..... [2]

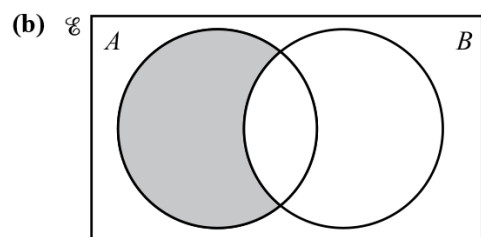
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6. 0980\_p20\_qp\_10 Q: 20

Use set notation to describe the shaded regions in each Venn diagram.



..... [1]



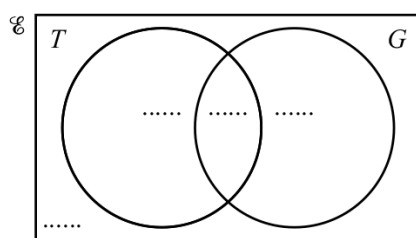
..... [1]

7. 0980\_p20\_qp\_10 Q: 23

- $\mathcal{E}$  = {children who go to the park}
- $T$  = {children who play tennis}
- $G$  = {children who play golf}

120 children go to the park.  
 50 play tennis.  
 75 play golf.  
 25 do not play tennis or golf.

(a) Complete the Venn diagram.



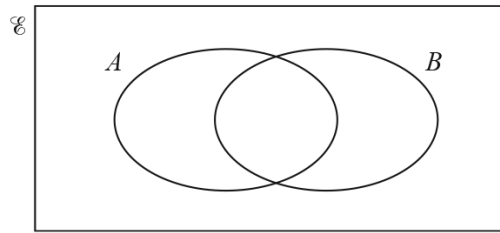
[2]

(b) Find  $n(T \cap G)$ .

..... [1]

8. 0980\_s20\_qp\_12 Q: 16

(a)



On the Venn diagram, shade the region  $A \cap B$ .

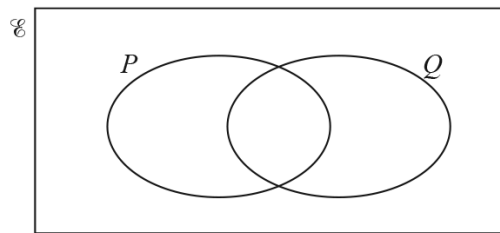
[1]

(b)

$U = \{1, 2, 3, 4, 5, 6\}$

$P = \{x : x \text{ is an even number}\}$

$Q = \{x : x \text{ is a prime number}\}$



Complete the Venn diagram.

[2]

9. 0980\_s20\_qp\_12 Q: 4

(a) Find the value of  $\sqrt{196}$ .

..... [1]

(b) Calculate  $15^3$ .

..... [1]

10. 0980\_p20\_qp\_10 Q: 2

Find the number of minutes from 17 58 to 7.13 pm.

..... min [1]

11. 0980\_p20\_qp\_10 Q: 7

(a) Write down a fraction which is equivalent to  $\frac{3}{5}$ .

..... [1]

(b) Write down the reciprocal of 7.

..... [1]

12. 0980\_w19\_qp\_11 Q: 18

Complete the table.

Fraction		Decimal		Percentage
$\frac{3}{4}$	=	0.75	=	
	=	0.2	=	20%
$\frac{2}{25}$	=		=	8%

[3]

13. 0980\_p20\_qp\_10 Q: 11

Here is a list of numbers.

Put a ring around the number with the largest value.

0.3030       $\frac{1}{3}$       0.0330       $\frac{3}{10}$       33%      [1]

14. 0980\_w19\_qp\_11 Q: 7

Write these in order of size, starting with the smallest.

$\frac{9}{19}$        $\frac{3}{7}$       37%      0.43

..... < ..... < ..... < ..... [2]  
*smallest*

15. 0980\_p20\_qp\_10 Q: 15

Write 2020 in standard form.

..... [1]

---

16. 0980\_s20\_qp\_12 Q: 17

Write  $2^{-4}$  as a decimal.

..... [1]

---

17. 0980\_s20\_qp\_12 Q: 21

(a) Write 45 000 in standard form.

..... [1]

(b) Write  $2.06 \times 10^{-2}$  as an ordinary number.

..... [1]

---

18. 0980\_w19\_qp\_11 Q: 11

Write 15 060

(a) in words,

..... [1]

(b) in standard form.

..... [1]

---



# Appendix A

## Answers

1. 0980\_p20\_MS\_10 Q: 1

	Answer	Mark	Partial Marks
	17017	1	

2. 0980\_p20\_MS\_10 Q: 17

	Answer	Mark	Partial Marks
	Cannot be written as a fraction oe	1	Accept 3 is a prime number Accept decimal going on forever with no pattern oe

3. 0980\_s20\_MS\_12 Q: 3

	Answer	Mark	Partial Marks
	$\frac{1}{10}$	1	

4. 0980\_s20\_MS\_12 Q: 11

	Answer	Mark	Partial Marks
(a)	Any square number greater than 10	1	
(b)	Any irrational number	1	

5. 0980\_s20\_MS\_12 Q: 22

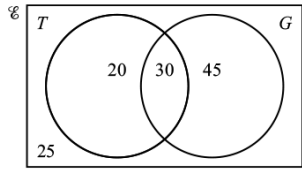
	Answer	Mark	Partial Marks
(a)	1 2 4 7 14 28	2	<b>B1</b> for 4 or 5 correct with no extras or 6 correct with one extra
(b)	$2 \times 3 \times 3 \times 3$ or $2 \times 3^3$	2	<b>M1</b> for 2, 3, 3, 3 or correct factor tree

	Answer	Mark	Partial Marks
(c)	240	2	<b>M1</b> for $48 = 2, 2, 2, 2, 3$ or $60 = 2, 2, 3, 5$ or list of multiples of both 48 and 60, at least 3 of each or <b>B1</b> for $240k$

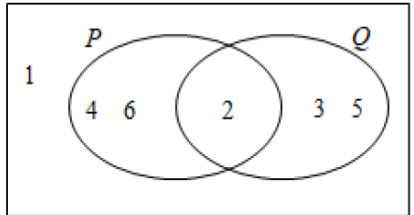
6. 0980\_p20\_MS\_10 Q: 20

	Answer	Mark	Partial Marks
(a)	$A \cap B$	1	
(b)	$B' \cap A$	1	

7. 0980\_p20\_MS\_10 Q: 23

	Answer	Mark	Partial Marks
(a)		2	<b>B1</b> for any 2 correct
(b)	30	1	<b>FT</b> from <i>their</i> diagram

8. 0980\_s20\_MS\_12 Q: 16

	Answer	Mark	Partial Marks
(a)	Intersection shaded	1	
(b)		2	<b>B1</b> for four or five numbers in the correct place

9. 0980\_s20\_MS\_12 Q: 4

	Answer	Mark	Partial Marks
(a)	14	1	
(b)	3375	1	

10. 0980\_p20\_MS\_10 Q: 2

	Answer	Mark	Partial Marks
	75	1	

11. 0980\_p20\_MS\_10 Q: 7

	Answer	Mark	Partial Marks
(a)	$\frac{3k}{5k}$ where $k$ is an integer $\neq 1$	1	
(b)	$\frac{1}{7}$ oe	1	

12. 0980\_w19\_MS\_11 Q: 18

	Answer	Mark	Partial Marks
	75% $\frac{1}{5}$ oe fraction [0].08	3	B1 for each

13. 0980\_p20\_MS\_10 Q: 11

	Answer	Mark	Partial Marks
	$\frac{1}{3}$	1	

14. 0980\_w19\_MS\_11 Q: 7

	Answer	Mark	Partial Marks
	37% $\frac{3}{7}$ 0.43 $\frac{9}{19}$	2	B1 for 3 in correct order as answer or M1 for two of 0.47... 0.42... 0.37

15. 0980\_p20\_MS\_10 Q: 15

	Answer	Mark	Partial Marks
	$2.02[0] \times 10^3$	1	

16. 0980\_s20\_MS\_12 Q: 17

	Answer	Mark	Partial Marks
	0.0625	1	

17. 0980\_s20\_MS\_12 Q: 21

	Answer	Mark	Partial Marks
(a)	$4.5 \times 10^4$	1	
(b)	0.0206	1	