

A Primes, Cubes, Irrational Numbers etc

1 71 73 75 77 79 81 87

From this list of numbers write down

(a) a prime number

71 or 73 [1]

(b) a square number.

81 [1]

4 80 81 82 83 84 85 86 87 88 89

From the list of numbers, write down a prime number.

83 or 89 [1]

1 Write down a cube number between 10 and 100.

27 or 64 [1]

3 21 24 25 27 29 39 48

From the list of numbers, write down

(a) the prime number,

29 [1]

(b) the cube number.

27 [1]

2

120

121

149

164

216

From this list, write down

(a) a square number

121

[1]

(b) a cube number.

216

[1]

2

91

93

95

97

99

From this list write down a prime number.

97

[1]

1

12

15

27

29

91

93

From the list of numbers, write down

(a) a cube number

27

[1]

(b) a prime number.

29

[1]

7

12

18

29

49

91

125

From the list of numbers, write down

(a) a cube number.

125

[1]

(b) a prime number.

29

[1]

1 32 33 34 35 36 37 38 39

From this list of numbers, write down

(a) a multiple of 8,

32 [1]

(b) a square number,

36 [1]

(c) a prime number.

37 [1]

1 29 31 41 49 51 59

From this list, write down **all** the numbers that are prime numbers.

29, 31, 41, 59 [2]

1 31 37 39 49 51 53 77 87

From this list write down **all** the prime numbers.

31, 37, 53 [2]

2 There are two prime numbers in this list.

27 47 57 61 75 93
÷3 ÷3 ÷5 ÷3

Work out the sum of these two prime numbers.

47 + 61 = 108 [2]

2

61

63

64

66

68

69

From this list, write down

(a) a cube number

64

[1]

(b) a prime number.

61

[1]

3

 $\frac{2}{5}$ $\sqrt{15}$

23

 $\sqrt{144}$

-2

0.8

From this list, write down

(a) a natural number (positive integers: 1, 2, 3, 4, etc.)

23 (or $\sqrt{144}$)

[1]

(b) an irrational number.

 $\sqrt{15}$

[1]

10 (a) Write down all the factors of 18.

$$\begin{array}{r} 18 \\ 1 \quad 18 \\ 2 \quad 9 \\ 3 \quad 6 \end{array}$$

1, 2, 3, 6, 9, 18 [2]

1 Write down a factor of 28 that is a prime number.

$$\begin{array}{r} 28 \\ 1 \quad 28 \\ 2 \quad 14 \\ 4 \quad 7 \end{array}$$

2 or 7 [1]

1 Write down a prime number between 30 and 40.

31 or 37 [1]

(c) Write down a prime number between 80 and 90.

83 or 89 [1]

2 90 91 92 93 94 95 96 97 98 99

$\div 7$
↓
 $\div 3$
↓

From this list, write down

(a) a prime number,

97 [1]

(b) a common multiple of 4 and 6.

4: 4, 8, 12, 16, 20, 24...

6: 6, 12, 18, 24, ...

12 (or 24, 36, 48...) [1]

2 Find the highest odd number that is a factor of 60 and a factor of 90.

60

1	60
2	30
3	20
4	15
5	12
6	10

90

1	90
2	45
3	30
5	18
6	15
9	10

15 [1]

1 Write down the cube number that is greater than 50 but less than 100.

$$4^3 = 64$$

64 [1]

- 3 (a) A number is greater than 1.
The number is also both a square number and a cube number.

Write down a possible value of this number.

$$8^2 = 64$$

$$4^3 = 64$$

64

[1]

- (b) Write down a prime number between 90 and 100.

97 (only)

[1]

- 6 (a) Explain why 111 is not a prime number.

It is divisible by 3 : $3 \overline{) 111} \begin{matrix} 037 \\ 111 \\ \hline 0 \end{matrix}$

[1]

- (b) Find a prime number between 110 and 120.

117 is divisible by 3

119 is divisible by 7

113 (only)

[1]

3

11 13 15 17 19

From this list, write down the number that is both a prime number and a factor of 195.

$$\begin{array}{r} 195 \\ 1 \overline{) 195} \\ 1 \quad 195 \\ 3 \quad 65 \\ 5 \quad 31 \\ 13 \quad 15 \end{array}$$

13

[1]

- 4 Write down

- (a) a square number greater than 10,

16 or 25 or 36 or 49... [1]

- (b) an irrational number.

(usually a square root which doesn't give an integer answer, or something like π)

eg. $\sqrt{15}$ or π [1]

1 Write down

(a) a square number between 101 and 150

121 or 144 [1]

(b) a fraction between $\frac{2}{3}$ and $\frac{3}{4}$

$\frac{8}{12}$

$\frac{9}{12}$

between these:

$\frac{8}{12}$

$\frac{9}{12}$

$\frac{16}{24}$

$\frac{17}{24}$

$\frac{18}{24}$

$\frac{17}{24}$

[1]

(c) an irrational number between 6 and 7.

$\sqrt{36}$

$\sqrt{49}$

only square root between here

e.g. $\sqrt{37}, \sqrt{38}, \dots$

$\sqrt{40}$ or 2π
(or many others)

[1]

7 Write down an irrational number between 3 and 4.

$\sqrt{9}$

$\sqrt{16}$

$\sqrt{10}$ or π
(or many others)

[1]

1 3.56 5 $\sqrt{196}$ 8 $\sqrt{7}$ 12

From the list, write down a number that is

(a) a multiple of 3,

12

[1]

(b) a cube number,

$2^3 = 8$

8

[1]

(c) a prime number,

5

[1]

(d) an irrational number.

$\sqrt{7}$

[1]

- 7 (a) Complete these statements.

The reciprocal of 0.2 is 5

A prime number between 90 and 100 is 97 [2]

(b)

$\frac{7}{5}$ 0.6 $\sqrt{7}$ 8 $\sqrt{9}$ $\uparrow 3$

From this list, write down an irrational number.

..... $\sqrt{7}$ [1]

- 1 P is a prime number where $60 < P < 80$.
 P is 2 less than a square number.

Find the value of P .

Squares: 64 , 81
 ↓ ↓
two less: 62 , 79
 ↑
 not prime

$P =$ 79 [2]