

Prime Numbers - Worksheet

Skill

Group A - Using the rules of divisibility

Identify which of the following numbers are divisible by 2, 3, 4, or 6:

- | | | |
|---------|--------|-----------|
| 1) 16 | 2) 36 | 3) 15 |
| 4) 12 | 5) 60 | 6) 118 |
| 7) 111 | 8) 464 | 9) 10 110 |
| 10) 366 | 11) 75 | 12) 400 |

Group B - Identifying prime numbers

List the factors and decide if the number is prime or not prime:

- | | | |
|-------|--------|--------|
| 1) 5 | 2) 17 | 3) 22 |
| 4) 27 | 5) 28 | 6) 3 |
| 7) 19 | 8) 37 | 9) 14 |
| 10) 8 | 11) 39 | 12) 49 |

Group C - Identifying prime factors

Find the prime factors of each number:

- | | | |
|--------|--------|--------|
| 1) 21 | 2) 14 | 3) 11 |
| 4) 22 | 5) 44 | 6) 4 |
| 7) 9 | 8) 19 | 9) 29 |
| 10) 82 | 11) 81 | 12) 25 |

Prime Numbers - Worksheet

Applied

- 1) From the box of numbers below, identify

4	9	2	21
3	13	17	19
23	5	29	11
7	27	9	15

- (a) An even prime number.
 - (b) The first double digit prime number.
 - (c) The smallest prime number.
 - (d) The largest prime number which is less than 10.
 - (e) The smallest prime number which is greater than 20.
- 2) What is the sum of all the single digit prime numbers?
- 3) What is the product of the largest single digit prime number and the smallest two digit prime number?

- 4) (a) Which number is the odd one out because it is not a prime number?

15**11****17****13**

- (b) Which number is the odd one out because it doesn't have 13 as a prime factor?

39**41****52****26**

Prime Numbers - Exam Questions

- 1) Write down all the prime numbers between 10 and 20.

.....
(2 marks)

-
- 2) (a) Find three different prime numbers that have a sum of 40.

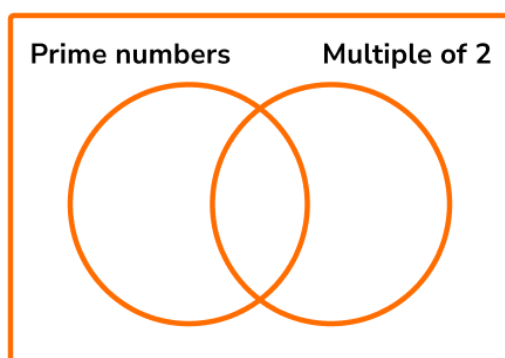
.....
(2)

- (b) Lewis says 'all prime numbers are odd'. Explain why Lewis is wrong.

.....
(1)
(3 marks)

-
- 3) (a) Place the numbers below in the Venn diagram.

18, 53, 27, 7, 2, 28, 47



(4)

- (b) Jacob says 'the largest prime number less than thirty is 29'. Is this true or false? Explain your answer.

.....
(1)
(5 marks)

Prime Numbers - Answers

	Question	Answer
	Skill Questions	
Group A	<p>Identify which of the following numbers are divisible by 2, 3, 4, or 6:</p> <p>1) 16 2) 36 3) 15 4) 12 5) 60 6) 118 7) 111 8) 464 9) 10 110 10) 366 11) 75 12) 400</p>	<p>1) Divisible by 2 & 4 2) Divisible by 2, 3, 4 & 6 3) Divisible by 3 4) Divisible by 2, 3, 4 & 6 5) Divisible by 2, 3, 4 & 6 6) Divisible by 2 7) Divisible by 3 8) Divisible by 2 & 4 9) Divisible by 2, 3 & 6 10) Divisible by 2, 3 & 6 11) Divisible by 3 12) Divisible by 2 & 4</p>
Group B	<p>List the factors and decide if the number is prime or not prime:</p> <p>1) 5 2) 17 3) 22 4) 27 5) 28 6) 3 7) 19 8) 37 9) 14 10) 8 11) 39 12) 49</p>	<p>1) 1, 5 - Prime 2) 1, 17 - Prime 3) 1, 2, 11, 22 - Not prime 4) 1, 3, 9, 27 - Not prime 5) 1, 2, 4, 7, 14, 28 - Not prime 6) 1, 3 - Prime 7) 1, 19 - Prime 8) 1, 37 - Prime 9) 1, 2, 7, 14 - Not prime 10) 1, 2, 4, 8 - Not prime 11) 1, 3, 13, 39 - Not prime 12) 1, 7, 49 - Not prime</p>

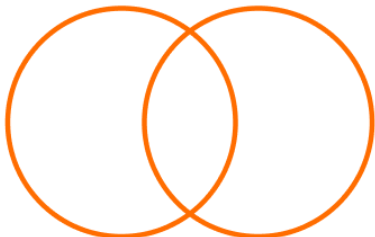
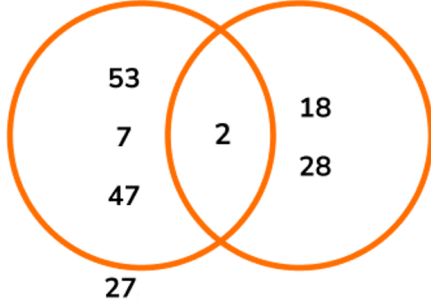
Prime Numbers - Answers

Group C	Find the prime factors of each number:	
	1) 21	1) 3 & 7
	2) 14	2) 2 & 7
	3) 11	3) 11
	4) 22	4) 2 & 11
	5) 44	5) 2 & 11
	6) 4	6) 2
	7) 9	7) 3
	8) 19	8) 19
	9) 29	9) 29
	10) 82	10) 2 & 41
	11) 81	11) 3
	12) 25	12) 5

Prime Numbers - Answers

	Question	Answer																
	Applied Questions																	
1)	<p>From the box of number below, identify</p> <table><tr><td>4</td><td>9</td><td>2</td><td>21</td></tr><tr><td>3</td><td>13</td><td>17</td><td>19</td></tr><tr><td>23</td><td>5</td><td>29</td><td>11</td></tr><tr><td>7</td><td>27</td><td>9</td><td>15</td></tr></table> <p>a) An even prime number. b) The first double digit prime number. c) The smallest prime number. d) The largest prime number which is less than 10. e) The smallest prime number which is greater than 20.</p>	4	9	2	21	3	13	17	19	23	5	29	11	7	27	9	15	<p>a) 2 b) 11 c) 2 d) 7 e) 23</p>
4	9	2	21															
3	13	17	19															
23	5	29	11															
7	27	9	15															
2)	What is the sum of all the single digit prime numbers?	$2 + 3 + 5 + 7 = 17$																
3)	What is the product of the largest single digit prime number and the smallest two digit prime number?	$7 \times 11 = 77$																
4)	<p>a) Which number is the odd one out because it is not a prime number?</p> <table><tr><td>15</td><td>11</td><td>17</td><td>13</td></tr></table> <p>b) Which number is the odd one out because it doesn't have 13 as a prime factor?</p> <table><tr><td>39</td><td>41</td><td>52</td><td>26</td></tr></table>	15	11	17	13	39	41	52	26	<p>a) 15</p> <p>b) $39 = 3 \times 13$ $52 = 4 \times 13$ $26 = 2 \times 13$ 41 is the odd one out</p>								
15	11	17	13															
39	41	52	26															

Prime Numbers - Mark Scheme

	Question	Answer	
	Exam Questions		
1)	Write down all the prime numbers between 10 and 20.	11, 13, 17, & 19 3 correct prime numbers identified only All 4 correct prime numbers only	(1) (1)
2) (a)	Find three different prime numbers that have a sum of 40.	(a) 2, 7 and 31 2 correct prime numbers identified only All 3 correct prime numbers only	(1) (1)
(b)	Lewis says 'all prime numbers are odd'. Explain why Lewis is wrong.	(b) Two is a prime number. It is the only even prime number.	(1)
3) (a)	Place the numbers below in the Venn diagram. 18, 53, 27, 7, 2, 28, 47	(a) 2 placed in the middle 18 & 28 in multiples of 2 only 7, 47 & 53 in prime numbers only 27 on the outside of the Venn diagram	(1) (1) (1) (1)
	<div style="border: 1px solid orange; padding: 10px; margin: 10px;"> <div style="display: flex; justify-content: space-around; font-weight: bold; font-size: 0.9em;"> Prime numbers Multiple of 2 </div>  </div>	<div style="border: 1px solid orange; padding: 10px; margin: 10px;"> <div style="display: flex; justify-content: space-around; font-weight: bold; font-size: 0.9em;"> Prime numbers Multiple of 2 </div>  </div>	
(b)	Jacob says 'the largest prime number less than thirty is 29'. Is this true or false? Explain your answer.	(b) True, because $29 = 29 \times 1$ only so it is prime and the closest integer below 30.	(1)

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