Foundation Check In - 1.02 Whole number theory

1. What is the cube root of 125?

2. Which one of these numbers is a common multiple of 9 and 11?

    9   11   81   189   198

3. Express 504 as a product of prime factors, giving your answer in index form.

4. Which of these are prime numbers?

    1   2   21   27   31

5. Find the Highest Common Factor of 144 and 342.

6. Two prime numbers bigger than three are added together. Explain why the total cannot be a prime number.

7. The Venn diagram below shows the factors of two numbers, A and B.
   Calculate the numbers A and B.
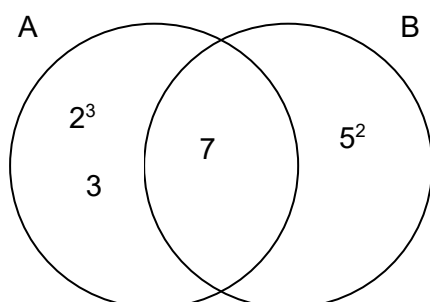
8. Using the information in question 7, write down all the factors of A that are less than 20.

9. Two 2-digit numbers have a Highest Common Factor of 5 and a Lowest Common Multiple of 70. Find the two numbers.

10. Sue has some coins. If she divides them into piles of 2, 3, 4 or 5 she always has one coin left over. What is the smallest number of coins she could have?

Extension

Tom says, "There is no square number that ends in a 2".
 Is Tom right? Explain your answer.

GCSE (9–1)
MATHEMATICS

Answers

1. 5

2. 198

3. $2^3 \times 3^2 \times 7$

4. 2 and 31

5. 18

6. Because all prime numbers bigger than three are odd and when you add two odd numbers together the answer is always even. To be a prime number the answer would have to be odd.

7. A = 168, B = 175

8. 1, 2, 3, 4, 6, 7, 8, 12 and 14

9. 10 and 35

10. 61

Extension

Tom is right because when you square the digits 0 to 9, the answer always ends in 0, 1, 4, 5, 6 or 9.

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Assessment Objective	Qu.	Topic	R	A	G
AO1	1	Find the cube root			
AO1	2	Identify common multiples			
AO1	3	Express a number as a product of prime factors using powers			
AO1	4	Identify primes			
AO1	5	Find the Highest Common Factor			
AO2	6	Apply properties of primes			
AO2	7	Evaluate products of prime factors			
AO2	8	Interpret the product of prime factors			
AO3	9	Solve a problem using the product of prime factors			
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