End of Unit Test Name: Answers

Integers, Powers and Roots - FOUNDATION

1) Here are some properties of numbers.

A Even
B Odd
C Prime
D Square
E Two-digit

(a) Which two properties does the number 4 have? Circle the correct letters.

(A) B C (D) E

(1)

(b) Can one number have all of the properties? Tick a box.

☐ Yes ☑ No ☐ Cannot tell

Give a reason for your answer.

Cannot be even and odd

OR square and prime

(1)

(c) Write down a number with three of the properties. State which properties it has.

(Infinite soutions!)

Number 11

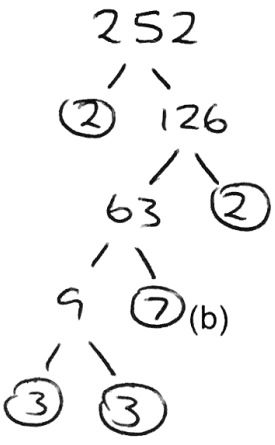
Properties B, C, E

(2)

(Total 4 marks)

2. Written as the product of its prime factors $672 = 2^5 \times 3 \times 7$

(a) Write 252 as the product of its prime factors.

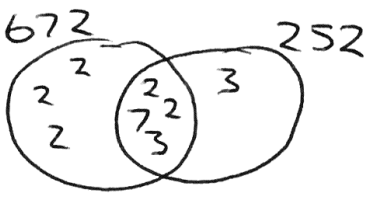


Answer $2^2 \times 3^2 \times 7$

(2)

(b) Work out the value of the highest common factor of 672 and 252

$2 \times 2 \times 3 \times 7 = 84$



Answer 84

(1)

(Total 3 marks)

3. (a) Write down the value of 5^3

Answer 125

(1)

(b) Write down the value of $\sqrt{81}$

Answer 9

(1)

(c) Between which two consecutive whole numbers does $\sqrt{40}$ lie?

$\sqrt{49} = 7$ and $\sqrt{36} = 6$

Answer 6 and 7

(2)

(Total 4 marks)

4. Simplify $3^4 \times 3^4$. Circle the answer.

(3⁸) 9^8 3^{16} 9^{16}

(Total 1 mark)

5. (a) Work out the value of $8^1 + 8^0$

$8^1 = 8$, $8^0 = 1$, $8 + 1 = 9$

Answer 9

(2)

(b) Write $6^{10} \div 6^2$ as a single power of 6

Answer 6^8

(1)

(c) Simplify fully $5x^3y^2 \times 3x^4y^3$

Answer $15x^7y^5$

(2)

(Total 5 marks)

6. (a) Circle the answer to $9.6 \times 10^8 \div 4$

9.6×10^2 2.4×10^2 (2.4 × 10⁸) 9.6×10^4

(1)

(b) Work out $(4 \times 10^{-3}) \times (9 \times 10^{14})$. Give your answer in standard form.

$4 \times 9 \times 10^{-3} \times 10^{14} = 36 \times 10^{11}$

$= 3.6 \times 10 \times 10^{11}$

Answer 3.6×10^{12}

(2)

(Total 3 marks)

(Total for test = 20 marks)