6.4 Answers

6.4.1 Solutions to 6.3 Exercise

Answer 1

(i) $8 = 2 \times 2 \times 2 \quad (= 2^3)$

(ii) $10 = 2 \times 5$

(iii) $18 = 2 \times 3 \times 3 \quad (= 2 \times 3^2)$

(iv) $50 = 2 \times 5 \times 5 \quad (= 2 \times 5^2)$

(v) $99 = 3 \times 3 \times 11 \quad (= 3^2 \times 11)$

(vi) $70 = 2 \times 5 \times 7$

[12 marks]

Answer 2

23 is already a prime number

Only composite numbers can be written as products of primes

[2 marks]

Answer 3

As 4 + 4 + 1 = 9 which is divisible by 3, it follows that 441 is divisible by 3

In fact, {Factors of 441} = {1, 3, 7, 9, 21, 49, 63, 147, 441} so any of those (other than 1 or 441) are suitable answers.

[3 marks]

Answer 4

No

As 2557884 is an even number it divides by 2.

(If it were prime it would only divide by itself and 1)

[2 marks]

Answer 5

No

As 41087335 has a last digit of 5 it divides by 5.

(If it were prime it would only divide by itself and 1)

[2 marks]

Answer 6

It's fairly straightforward to spot that 847 divides by 7.

In fact, {Factors 847} = {1, 7, 11, 77, 121, 847} so other answers are possible.

[3 marks]

Answer 7

Yes, the number 2 is both even and prime. (It's the only even prime number)

[3 marks]

Answer 8 Math-Art question. **[13 marks]**