Q1) Simplify the following

1. 2 × 2 × 2 × 2 × 2 × 2 × 2× 2 × 2
2. m × m × m
3. y × y × y × y

Q2) Which of the following are true?

a) 24 × 26 = 210 b) 1020 ÷ 103 = 1017

c) 46 ÷ (42 × 43) = 41 d) 92 × (930 ÷ 925) = 910

 Q3) Use your calculator to find the exact value of

 a) 43 b) 125 c) 128

 d) 50-1 e) 4-2 d) 2-3

 Q4) Write as a single power:

 a) (x2)4 b) (z10)2 c) (y-1)6

 Q5) Find the numbers replaced by x in these statements

 a) 3x = 9 b) 10x= 1000 c) 4x = 1/16

 d) (5x)2 = 56 e) x5 = 1

**Exam style questions**

 Q6) Simplify

a) 42 × (41/2)4 b) √ (93 × 95)

 43 9-1

 (4 marks)

Q7) A square orchard is full of apple trees. If there is only 1 tree per square metre and there are 81m2 of orchard. How many trees are there along one edge?

 (2 marks)

# Q8) One formula which can be used to calculate the kinetic energy of a plane is

# **K.E. = 150v2**

 Using the formula, calculate the K.E. of a plane where v = 500.

 (2 marks)

 Q1) a) 29

1. m3
2. y4 (1 mark each , 3 marks)

Q2) a) true

1. true
2. true
3. false ( 1 mark each, 4 marks)

Q3) a) 64

1. 248832
2. 1
3. 0.02
4. 0.0625
5. 0.125 (1 marks each, 6 marks)

Q4) a) x8

1. z20
2. y-6 (1 mark each , 3 marks)

Q5) a) x = 2

1. x = 3
2. x = -2
3. x = 3
4. x = 1 (1 mark each , 5 marks)

Q6) a) 4 b) 96 (1 mark each, 2 marks)

Q7) 9 (1 mark)

Q8) 37500000 (1 mark)

## TOTAL / 25