Year 7
Mini Test 5

Baldivis Secondary College

Name: _____ Class: _____ Time: 30 minutes Total Mark: ___/39

Show working and answers on this sheet. Show working in sufficient detail to support your answers. Incorrect answers without supporting reasoning may be allocated zero marks.

No Resources Allowed

1. Write in index form. **[3 mark]**

   a. $8 \times 8 \times 8$ 8^3 ✓

   b. $4 \times 4 \times 4 \times 4 \times 4 \times 4$ ~~8^6~~ 4^6 ✓

   c. $2 \times 5 \times 2 \times 5 \times 5 \times 5$ $2^2 \times 5^4$ ✓

2. Write in expanded form. **[2 mark]**

   a. 10^2 10×10 ✓

   b. 6^4 $6 \times 6 \times 6 \times 6$ ✓

3. Find all the factors of each of the following numbers **[5 marks]**

   a. 21

   1 21 ✓
   3 7 ✓

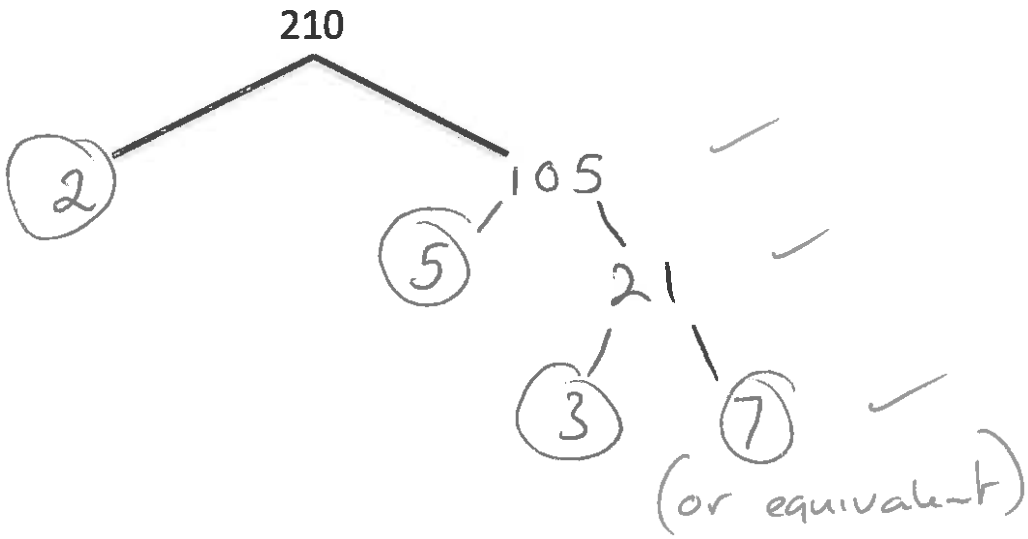
   b. 28

   1 28 ✓
   2 14 ✓
   4 7 ✓

($\frac{1}{2}$ mark each correct factor).
($-\frac{1}{2}$ for incorrect factor).

4. Complete the factor tree below and use this to write down the prime factors of 210

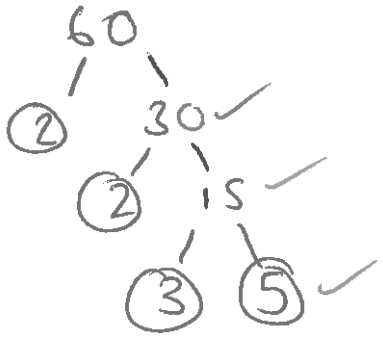
[4 marks]



$210 = 2 \times 5 \times 2 \times 3 \times 5 \times 7$

5. By drawing a factor tree or otherwise, use index notation to express 60 as a product of its prime factors.

[5 marks]



(or equivalent)

$2 \times 2 \times 3 \times 5 = 2^2 \times 3 \times 5$

6. Use your answers to questions 4 and 5 to find the:

[4 marks]

a. Lowest common multiple of 60 and 210.

$2 \times 3 \times 5 = 30$

b. Highest common factor of 60 and 210.

$2 \times 2 \times 3 \times 5 \times 7 = 420$

10. Calculate the value of the following

[5 marks]

a. $5^2 =$ 25 ✓ (1)

b. $\sqrt{25} =$ 5 ✓ (1)

c. $\sqrt{900} =$ 30 ✓ (1)

d. $\sqrt{0.36} =$ 0.6 ✓ or $\sqrt{\frac{36}{100}} = \frac{6}{10}$ ✓ (2)

11.

[2 marks]

a. 4.7^2 is between which two square numbers?

4.7^2 is between 16 and 25 ✓

b. $\sqrt{20}$ is between which two whole numbers?

$\sqrt{20}$ is between 4 and 5 ✓

12. Evaluate the following

[5 marks]

a. $5 + \sqrt{49} =$

$5 + 7 = 12$ ✓

b. $\sqrt{16} - 2 \times 12 =$

$4 - 2 \times 12 = 4 - 24 = -20$ ✓✓

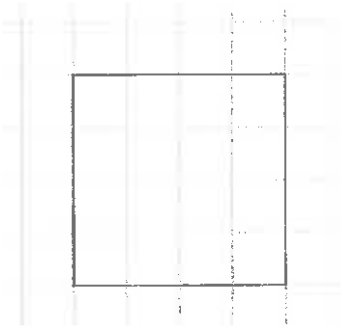
c. $\sqrt{4^2 + 3^2} =$

$\sqrt{16+9} = \sqrt{25} = 5$ ✓✓

END OF TEST

7. Use the diagram below to find 4^2.

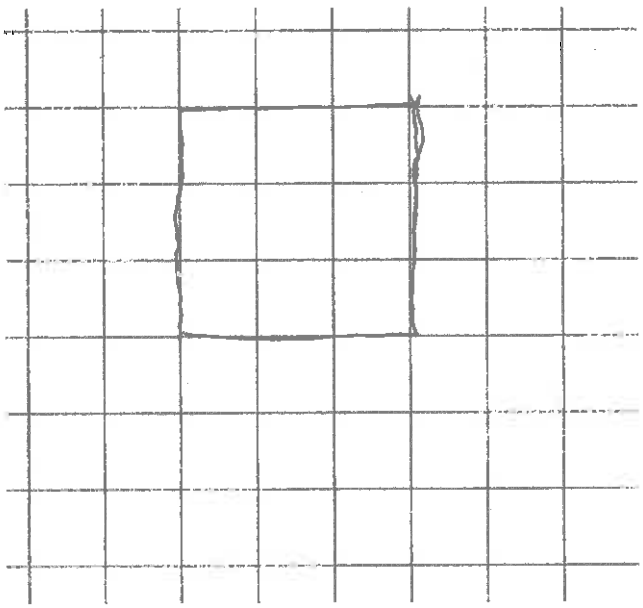
[1 mark]



$4^2 = 16$ ✓

8. On the grid below draw a square with an area of $9cm^2$.

[2 marks]



✓

What is the side length of the square?

3cm ✓

9. A square as an area of $100cm^2$. Find the length of one of the sides.

[1 mark]

$\sqrt{100} = 10cm$ ✓