Year 7

**Mini Test 4**

**Algebra and Volume**

Baldivis Secondary College

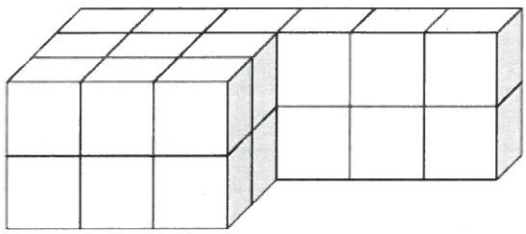
Name: Solutions.

Total Marks: / 24
Total Time: 35 minutes

**Question 1** **2 marks**

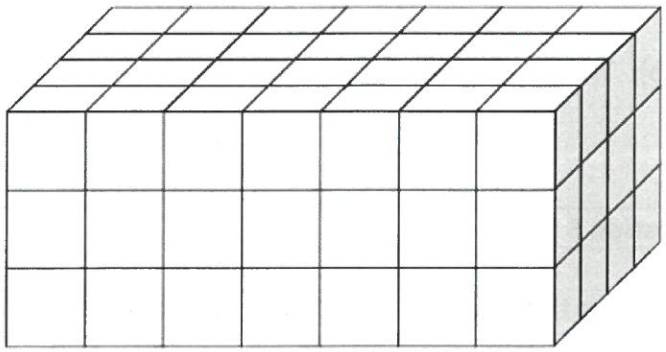
How many cubic centimetres are there in the following rectangular prisms? (Each cube represents $1cm^3$)

a)



Volume: $24cm^3$ ✓

b)



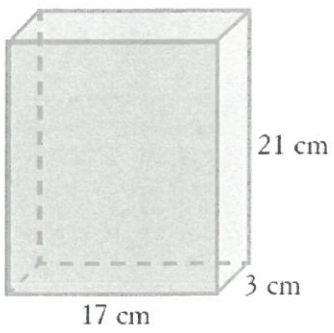
Volume: $84cm^3$ ✓

½ mark if they forget unit or $^3$.

**Question 2** **6 marks**

What is the volume of the following shapes?

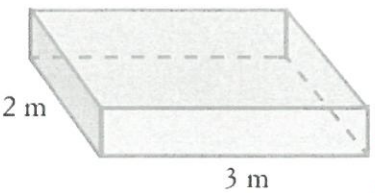
a)




$17 \times 3 \times 21$

Volume: $1071cm^3$ ✓ ✓

b)

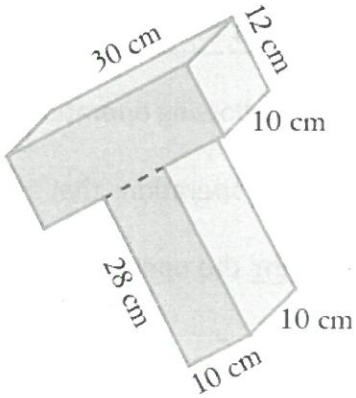



50cm = 0.5m

$2 \times 3 \times 0.5$

Volume: $3m^3$ ✓ ✓

c)




$30 \times 12 \times 10 = 3600$
$28 \times 10 \times 10 = 2800$ +

Volume: $6400cm^3$ ✓ ✓

**Question 3** **2 marks**

Using the correct order of operations, solve the following equations: BIMDAS

a) $5 \times 3 + 4 =$

15 + 4 = 19 ✓

b) $(3 + 9) \div (2 + 1) =$

12 ÷ 3 = 4 ✓

**Question 4** **4 marks**

Write these phrases as algebraic expressions (let the number be '$n$').

a) The sum of a number and 7: n + 7 ✓

b) The product of a number and 4: n x 4 ✓

**Question 5** **4 marks**

Substitute the values in the following algebraic expressions and solve:

a) $12 - 2 \times p$ if p = 2

12 - 2 x 2 ✓

12 - 4

= 8 ✓

b) $k \times (3 + w) - 4$ if k = 3 and w = 5

3 x (3+5) -4

3 x 8 - 4 ✓

= 24 - 4 20 ✓

**Question 6** **2 marks**

For the following operations:

Circle the operations that are **Commutative**

Underline the operations that are **Associative**

(2 x 0) x 1 and 2 x (0 x 1) ✓ (2 – 7) – 5 and 2 – (7 – 5) 15 + 23 and 23 + 15 ✓ 5 ÷ 4 and 4 ÷ 5

**Question 7** **4 marks**

A. A box measures 20cm by 30cm by 40cm.

i. What is the volume of the box in **cm**?

$20 \times 30 \times 40$

Volume: $24{,}000cm^3$ ✓

ii. What is the capacity of the box in **litres**?

$24{,}000cm^3 \rightarrow 24\ L$
$\div 1000$

Capacity: 24 litres ✓

B. A goldfish tank measures 35cm by 25cm by 400mm.

i. What is volume of the tank in **cm**?

$35 \times 25 \times 40$

Volume: $35{,}000cm^3$ ✓

ii. What is the capacity of the tank in **millilitres**?

$35{,}000cm^3 \rightarrow 35{,}000mL$

Capacity: $35{,}000mL$ ✓

**End of Mini Test**