



# Year 8 Maths Homework Sheet No. 17

To be completed on loose-leaf paper.



**Aims:**

- To provide ongoing revision of skills and concepts
- To develop procedural knowledge and fluency.

**Need help? →**

1. Evaluate the following:

**a**  $3 \times 8 + 4 \div 2 - 7 \times 5$       **b**  $3 + 8 \div 4 - 2 \times 7 + 5$       **c**  $^{-}3 + 8 \div ^{-}4 - ^{-}2 \times 7 + 5$

2. Evaluate the following by substituting  $m = ^{-}1$ ,  $n = 10$  and  $p = ^{-}7$

**a**  $5n - 10$       **b**  $m^2 + 3m$       **c**  $3m - 6p - 9n$

3. Factorise the following expressions by first showing each term as the product of its prime factors (e.g.  $^{-}12ab^2c$  can be written as  $^{-}2 \times 2 \times 3 \times a \times b \times b \times c$ )

**a**  $5n - 10$       **b**  $m^2 + 3m$       **c**  $3m - 6p - 9n$

4. Evaluate the following by substituting  $x = ^{-}8$

**a**  $2(x + 5) - 3$       **b**  $\frac{2x}{5} - 3$       **c**  $\frac{x+2}{3} - 5$

5. Solve the following equations for  $x$ . Include a check to indicate that the value of  $x$  found is correct.

**a**  $2(x + 5) - 3 = 1$       **b**  $\frac{2x}{5} - 3 = 1$       **c**  $\frac{x+2}{3} - 5 = 1$

6. A vet treats many different animals requiring medical attention. Because she deals with different animals of different sizes, the amount of medication required depends upon the animal's weight.

Two dogs that had been fighting required medication to prevent their wounds from becoming infected. The dogs were treated with the same antibiotic, but because they were different sizes they required different amounts.

The rule to work out how much medication the dogs required:  $\frac{w}{5} - 1 = \text{number of tablets per day}$   
where  $w$  is the weight of the dog in kg.

- a** The first dog weighed 15 kg. How many tablets were prescribed for this dog per day?  
**b** The second dog weighed 25 kg. How many tablets were prescribed for this dog per day?  
**c** In a different case, Lauren prescribed 6 tablets per day. How much does the dog weigh?

**ANSWERS:** You must show the mathematics used to get these answers. Simply writing the answer is not enough.

**1 a**  $^{-}9$    **b**  $^{-}4$    **c**  $14$       **2a**  $40$    **b**  $^{-}2$    **c**  $^{-}51$       **3 a**  $5(n - 10)$    **b**  $m(m + 3)$    **c**  $3(m - 2p - 3n)$   
**4 a**  $^{-}9$    **b**  $^{-}6.2$    **c**  $^{-}7$       **5a**  $^{-}3$    **b**  $10$    **c**  $16$       **6 a**  $2$  tablets   **b**  $4$  tablets   **c**  $35$  kg