Student Name: _____	**Grade**: _____
Date: _____	**Score**: _____

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8 Year 8 Term 4 Week 8 Homework

8.1 Term 4 Review 1

8.1.1 Algebra

Exercise 8.1.1 Simplify the following expressions:

1. $27x^3 \div 3x =$ _____
2. $5x^6 \times (-3x^5) =$ _____
3. $63a^2b^3 \div 3ab =$ _____
4. $ab - 3a^2 + 7ba - 2ab + 2a^2 =$ _____
5. $(x^6 \times x^7) \div x^5 =$ _____
6. $(5a^3b^2)^3 =$ _____

Exercise 8.1.2 Expand and simplify:

1. $8x + 3(2x + 5) =$ _____
2. $6m - 4(3m - 2) =$ _____
3. $7(5 - 4y) + 12y =$ _____
4. $4 - 2(3x - 1) + 2x =$ _____
5. $3x(2x + 3y) + 5x(x - y)$ _____
6. $3x(x^2 - 3x) + 5(x^3 + x^2) =$ _____

Exercise 8.1.3 Simplify the following fractions:

1. $\frac{2x}{3} + \frac{3x}{8} =$ _____
2. $\frac{7y}{2} - \frac{2y}{7} =$ _____
3. $\frac{6}{2x} \times \frac{4}{9x} =$ _____
4. $\frac{2y}{3a} \div \frac{a}{2y} =$ _____
5. $\frac{m-5}{4} + \frac{4+m}{3} =$ _____
6. $\frac{5n-2}{3} - \frac{n-3}{4} =$ _____

Exercise 8.1.4 Expand and simplify the following:

1. $(5x-7)(6-3x) =$ _____
2. $3(2x-5)(2x+4) =$ _____
3. $3(5-7x)^2 =$ _____
4. $3(2x-3)(2x+3) =$ _____
5. $(x-1)^2+(x+1)^2 =$ _____

Exercise 8.1.5 Fatorise the following:

1. $6ab+3a^2b+12a^2b^2 =$ _____
2. $a^2b^2+a^2b-ab^2 =$ _____
3. $4abc-2ab+16a^2c =$ _____

Exercise 8.1.6

1. *A car travels at x km/h for 14 km, them increases speed by 8 km/h and travels for a further 6 km. How long did the car travel (give your answer in terms of x)?*

   _____

   _____

   _____

2. *A group of 12 people have $A between them. A thirteenth person joins them and brings with him $120. What is the average wealth of each person?*

   _____

   _____

   _____

3. *Joshua receives $(5P + 2) pocket money. On each consecutive birthday this amount is doubled. How much will be receiving five birthdays from now?*

   _____

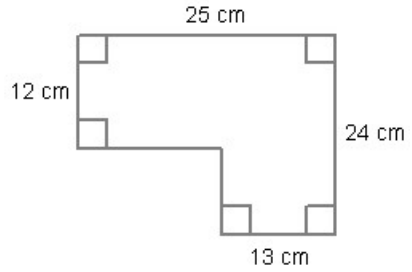
   _____

   _____

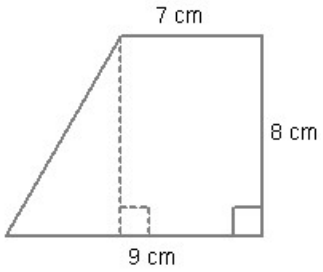
8.1.2 Area

Exercise 8.1.7 Find the area of each of these shapes below:

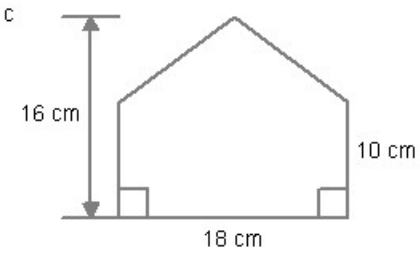
a



b



c



8.1.3 Equations

Exercise 8.1.8 Solve the following equations:

1. $9(x-2)=45$
2. $\frac{m}{3}-4=12$
3. $7-\frac{6m}{4}=19$
4. $2x-5=4x+5$
5. $5(3x-4)=4(3x-8)$
6. $\frac{x-3}{4}=\frac{4+x}{3}$

Exercise 8.1.9 Given the formula $A=\frac{1}{2}(a+b)\times h$.

1. *Find A if a = 9 cm, b = 15 cm and h = 8 cm.*
2. *Find h if A = 37.5 cm^2, a = 7 cm and b = 8 cm.*
3. *Find a if A = 360 cm^2, b = 25 cm, and h = 16 cm.*

Exercise 8.1.10

1. *Bill, James and Tony are given $200 as reward for returning a lost wallet. They agree that Tony should get four times as much as Bill who gets three times as much as James. How much does each boy receive?*
2. *The hire of a car is $75 a day plus 15 cents per kilometre. If the total cost of hiring was $186. How many kilometres were driven?*
3. *One bottle holds 250 mL more than another. If the smaller is three quarters full it holds as much as the larger one when it is half full. What is the capacity of each bottle?*

8.1.4 Pythagoras' Theorem

Exercise 8.1.11

1. *Two trees 30 metres apart are different heights, one is 15 m and the other is 28 m. What is the distance between the tops of the trees, correct to 1 decimal place?*

2. *A triangular prism has a volume of 480 cm^3. The cross section of the prism is an isosceles triangle with a base of 6 cm. The depth of the prism is 20 cm. Find the length of the longest side of the triangular cross section, correct to 2 decimal places.*

3. *The sides of a rectangle are such that the width is three quarters the length. If the diagonal is 15 cm, find the length and the width.*

4. *The diagonals of a rhombus are 32 cm and 48 cm. What is the length of the side of the rhombus, correct to 2 decimal places?*

5. *In the figure, ABCD is a rectangle. DC = 5 cm E is a point on AB such that DE = 3 cm and EC = 4 cm. Find the perimeter of the rectangle ABCD.*