Using Formulae – Australian version

Name _____ Date _____

USING FORMULAE – Unit 1 AoS 4 - Relationships

You need to know how to:

❑ Demonstrate simple algebraic substitution with simple formulae to find solutions to everyday problems

❑ Apply simple formulae to find solutions to everyday problems such as area, amounts or costings

Remember	2a means 2 x a	
	2(a + b) means 2 x (a + b)	$\dfrac{2}{a}$ means 2 ÷ a

Examples of formulae

Calculating Pay

P = hours worked x r + bonus

P = total pay

r = rate of pay

Convert degrees Fahrenheit (^{0}F) to degrees Celsius (^{0}C)

$$C = (F - 32) \ \times \ \frac{5}{9}$$

Convert currency

$ 1 = £0.68

Find the perimeter of a rectangle

$$P = 2(l + w)$$

Calculating printing costs

C = 27 + 0.4 x n

C = costs in $ and

n = number of leaflets

Questions

1. The temperature in Reading was 74^0 Fahrenheit. What is this in Celsius?

2. The temperature in Moscow is -5^0 Fahrenheit. What is this in Celsius?

3. Find the perimeter of a rectangle with length 8cm and width 9cm.

4. A travel agent sells currency without a commission charge for people who book their holiday with them. If the exchange rate is $1= £0.68 how many $s would you get for £250?

5. A cake shop calculates its profit using the formula to the right.

They sell doughnuts for 80¢ each.

P = n (selling price) – n (overheads + ingredients)

Where n = number of cakes

P = total profit

The ingredients for each cake cost them 12¢ and their overheads add another 8.5¢ to their costs. How much profit do they make on selling 100 doughnuts?

6. Using the printing costs formula above, how much does it cost to print 250 leaflets?

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Using this 'printing costs' formula, answer the questions below.

> Calculating printing costs
>
> C = 27 + 0.4 x n
>
> C= costs in $ and
> n = number of leaflets

1. The cost of producing 50 leaflets.

2. The cost of producing 1000 leaflets.

3. If you had $850, approximately how many leaflets would you be able to print?

4. You want to print 25 leaflets. How much will this cost you?

5. The printer offers a discount of 10% on the total order if you order more than 2000 copies of your leaflet. How much will it cost to print 5000 leaflets?

6. The printer offers $20 off for all repeat orders as long as the original order was for 1000 or more copies. Jackson & Co originally order 5000 copies and then needed another 1000. How much did this repeat order cost?

7. Orders for more than 10,000 copies get a special discount of 15% off the total cost. How much does it cost to print 20,000 copies?

8. Using the above discount rate, work out how much a customer would save on a print run of 50,000?

9. If the cost of an order is going to be more than $1000, the printer asks for a deposit of 20%. Calculate the number of copies (to the nearest 100) that could be ordered without having to put down a deposit.

10. In one week the printer produced 2,000,000 leaflets for a customer. What is the total cost before any discounts?