Keep Your Shirt On

Key financial ideas

- It's sensible to find out what people will be prepared to pay for a new product.
- The selling price needs to cover costs and provide a profit.
- The more you produce, the lower the fixed costs per unit will be.

You need: a calculator

ACTIVITY ONE

Whana screenprints original Māori designs onto plain T-shirts. He has decided to screenprint some to sell and is working out how much to charge for them. He has asked 100 people what they think about his pricing suggestions.
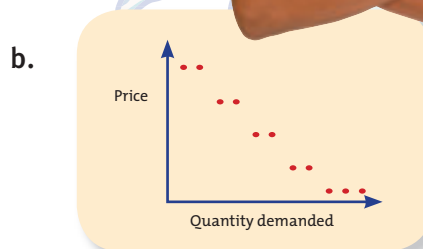
1.

T-shirt price	Number of purchases
$5.00	100
$10.00	95
$12.00	72
$15.00	64
$18.00	51
$20.00	42
$22.00	28
$25.00	16
$30.00	9
$40.00	9
$50.00	8

The more I charge, the fewer people there are who can afford to buy my one-off T-shirts. But the chart tells me more than that!

Which graph below best shows Whana's data?
Explain how you chose the graph.

a.

Price
Quantity demanded

b.

Price
Quantity demanded

c.

Price
Quantity demanded

d.

Price
Quantity demanded

2. a. Although Whana could sell all his T-shirts at $5, why wouldn't he use that price?
   b. How many T-shirts would probably be bought if they cost over $30 each to buy?

Whana has these costs when producing his one-off T-shirts.

The variable costs change with the number of T-shirts designed.
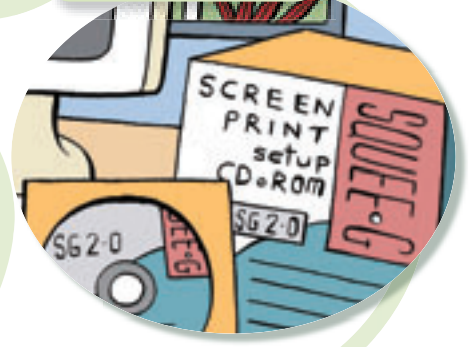
Cost of basic T-shirt $10.00

Ink and stencil per T-shirt $2.50

Rent of garage (paid to his Dad) $10.00 per day used

Computer design program $80.00

Printing and tidy-up per T-shirt 20 minutes
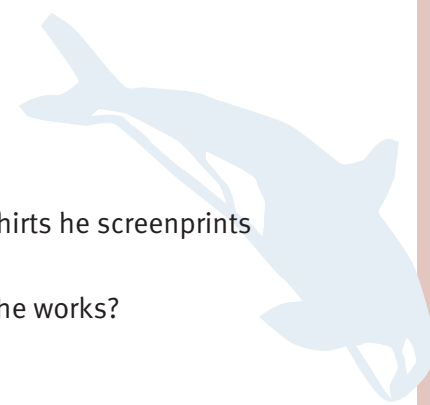
Use of Dad's computer and printer $12.00 per day used

Advertising (1 000 fliers) $20.00

Preparation and design time per T-shirt 40 minutes

1. Which costs are variable?

2. Fixed costs are those that Whana has to pay no matter how many T-shirts he screenprints on a particular day.
   a. What fixed costs does Whana have regardless of whether or not he works?
   b. On a working day, what are Whana's fixed costs?

3. a. How many T-shirts could Whana screenprint in an uninterrupted 8 hour day?
   b. Excluding his time and fixed costs, what does it cost Whana to produce each T-shirt?

1. Whana decides to spend 10 days designing and printing T-shirts in the two months before Christmas. He also decides it's time to print and distribute the 1 000 fliers.
   Why is this 2 month period a good time?

2.

Fixed costs			Variable costs	
Item	Rate per day	Per T-shirt @ 8 T-shirts per day	Item	Per T-shirt
Rent of garage	$10.00	$1.25	Basic T-shirt	$10.00

Don't forget to include my wages!
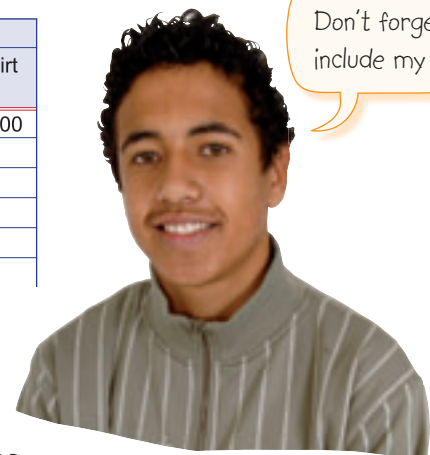
For these 10 days, Whana plans on producing and selling 8 original T-shirts per day and paying himself $10.00 per hour. He spreads out his fixed costs over the 10 days and uses a table to organise his information.
   a. Copy and complete the table for him for 1 day. (Use your answers from **Activity Two,** question **2**.)
   b. Explain your reasons for your figures for the cost of the advertising and the computer design program.
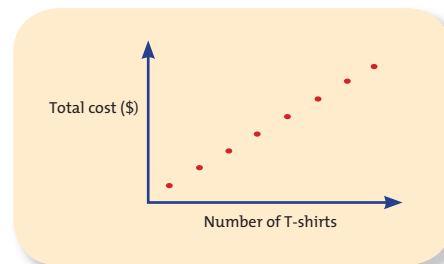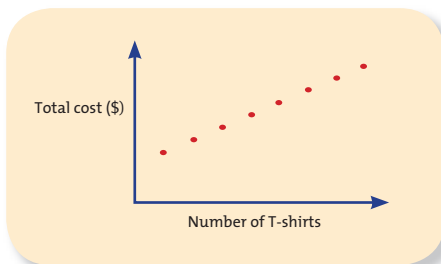
3. **a.** Which rule below is best for Whana to work out his costs per T-shirt?
Explain why.

> It costs $26.50 for every T-shirt Whana prints.

> The first T-shirt of each day costs $54.50 to print.
> Each T-shirt after that costs $22.50 to print.

b. Which of these graphs matches each rule?

Total cost ($) — Number of T-shirts

Total cost ($) — Number of T-shirts

4. **a.** What price should Whana charge for a T-shirt if he sells all he can make in 10 days
and he makes $10 profit per T-shirt? Include 12.5 percent for goods and services tax
(GST) but ignore, for this exercise, any income tax he might have to pay on his profit.

b. How much total profit will he make?

reflective questions

- How useful would a spreadsheet be in presenting cost and pricing information?
  Explain.
- What are the risks that Whana takes if he prices his T-shirts for the top end of
  his market survey?