Television Views
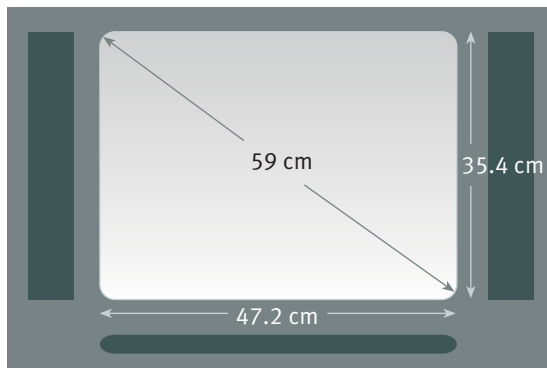
You need: a calculator
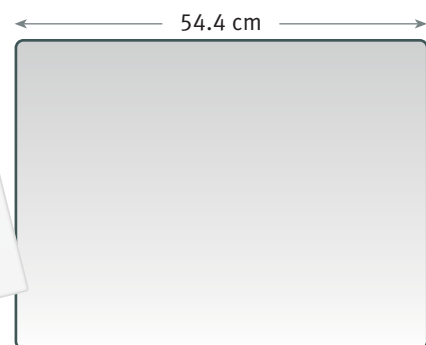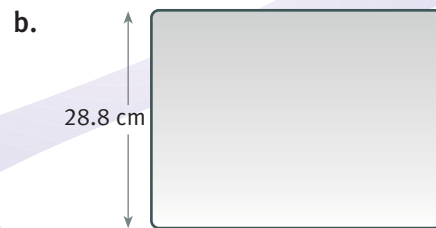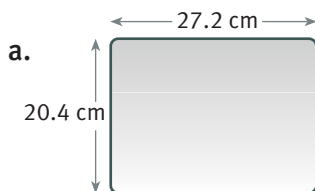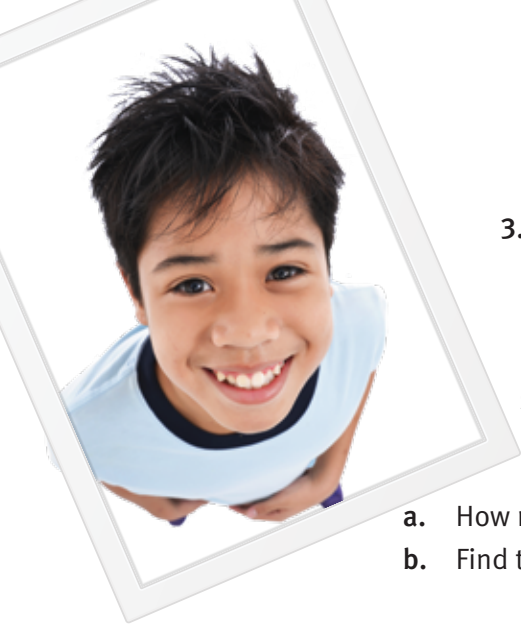
Marcia's family are thinking of buying a new television set. They find that the size of a set is given in centimetres and that this measurement is the length of the diagonal of the screen.

For example, a 59 centimetre screen has these measurements:
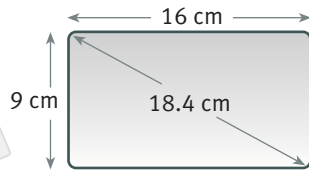
59 cm

35.4 cm

47.2 cm

1. What is the ratio of the width of the screen to its height?

2. The ratio you have just found is standard on most televisions. Use it to find the missing width, height, and diagonal measurements of these screens:
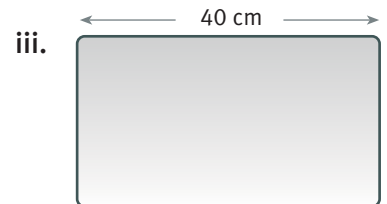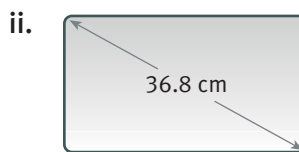
a.
27.2 cm
20.4 cm

b.
28.8 cm

54.4 cm

d.
20 cm

3. New widescreen televisions are specifically designed for viewing DVDs. The ratio of width to height for these screens is 16:9.

16 cm

9 cm   18.4 cm

a. How much wider are the wide screens than a normal screen of the same height?

b. Find the missing width, height, and diagonal measurements of these screens:

i.

27 cm

ii.

36.8 cm

iii.

40 cm

Computer screens display images as *pixels*. People often think of these as tiny dots. The number of pixels that a screen can display horizontally and vertically is known as its *resolution*. This can be changed using the Control Panel.

A computer screen that is set to a resolution of 640 by 480 pixels can display 640 pixels on each of 480 lines.
If the resolution is increased to 800 by 600, 800 pixels now fit where 640 used to fit and 600 where 480 used to fit, so everything on the screen looks smaller.

Marcia scans in one of her photographs. When the screen resolution is set to 1 024 by 768, the photo measures 15 centimetres by 10 centimetres. What will its dimensions be when the screen resolution is changed to:

a. 640 by 480?
b. 800 by 600?
c. 1 152 by 864?
d. 1 280 by 960?