Forming and Solving Equations

(a) Lily, Tia and Seher have a combined age of 53. Tia is twice as old as Lily. Seher is five years older than Lily. Form an equation and solve it to find Lily's age.
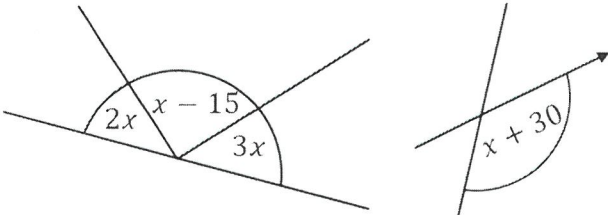
(b) Bruno is thinking of a number. If he triples the number, then subtracts seven the answer he gets is 35. Form an equation and solve it to find Bruno's number.

(a) $x + 2x + x + 5 = 53$
$4x + 5 = 53$
$4x = 48$
$x = 12$

(b) $3x - 7 = 35$
$3x = 42$
$x = 14$

For each of the angle diagrams, form an equation and solve to find the value of x.

(a)

$2x$ $x - 15$
$3x$

(b)

$x + 30$

$4x$

(c)

$x + 15$

$2x$
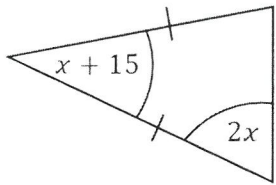
(a) $2x + 3x + x - 15 = 180$
$6x - 15 = 180$
$6x = 195$
$x = 32.5°$

(b) $x + 30 + 4x = 180$
$5x + 30 = 180$
$5x = 150$
$x = 30°$

(c) $2x + 2x + x + 15 = 180$
$5x + 15 = 180$
$5x = 165$
$x = 33°$

For each of the shapes given, form an equation from their perimeter or area and solve it to find x.

(a) $P = 31$ cm   (b) $A = 25.2$ cm^2

$2x + 3$

$x - 1$

(c) $P = 78$ mm

$5x - 4$

$2x + 1$

14 cm

$3x$ cm
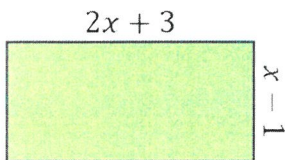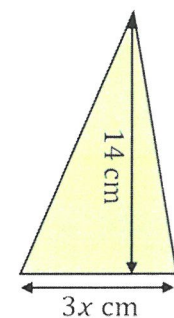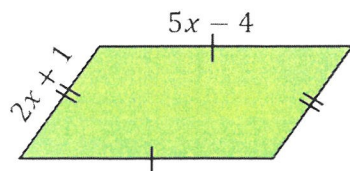
(a) $2x + 3 + 2x + 3 + x - 1 + x - 1 = 31$
$6x + 4 = 31$
$6x = 27$
$x = 4.5$

(b) $\dfrac{3x \times 14}{2} = 25.2$
$21x = 25.2$
$x = 1.2$ cm

(c) $2x + 1 + 5x - 4 + 2x + 1 + 5x - 4 = 78$
$14x - 6 = 78$
$14x = 84$
$x = 6$ mm