

PC 11 Solving Quadratic Equations

$$x^2 = 49$$

$$x^2 + 17x + 50 = 3x + 5$$

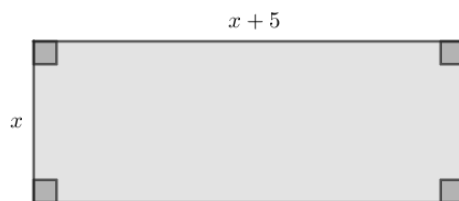
$$x^2 + 11x - 39 = x$$

$$x^2 + 4x = 7$$

$$x = 10 - \frac{21}{x}$$

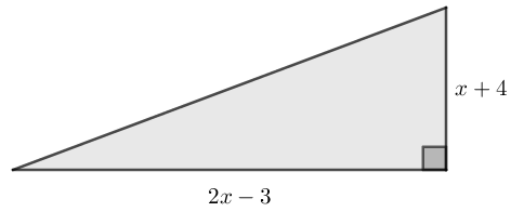
$$\frac{x+2}{2x-5} = \frac{2x-1}{x-2}$$

A rectangle has sides measuring x cm by $(x + 5)$ cm. The area of the rectangle is 24 cm^2 .



- (a) What values of x are valid in this context?
- (b) Calculate the lengths of each side.

A right-angled triangle has shorter sides measuring $(2x - 3)$ cm and $(x + 4)$ cm, as shown in the figure.



- (a) What values of x are valid in this context?
- (b) Calculate $A(x)$, the area of the triangle in terms of x . State the domain.
- (c) At what value of x is $A(x) = 20$ cm²?
- (d) Show that the hypotenuse h is given by the function

$$h(x) = \sqrt{(5x^2 - 4x + 25)} \text{ cm.}$$

- (e) Calculate x when $h(x) = \sqrt{37}$.