

24 Martha walks a distance of 10 km at a speed of x km/h.
She then runs a distance of 5 km at a speed of $(x + 4)$ km/h.
The total time taken for the whole journey is 3.5 hours.

(a) Write down an expression in terms of x for the time Martha is walking.

..... h [1]

(b) Show that $7x^2 - 2x - 80 = 0$.

[4]

(c) Solve $7x^2 - 2x - 80 = 0$, giving your answers correct to 2 decimal places.
You must show all your working.

$x = \dots\dots\dots$ or $x = \dots\dots\dots$ [3]

(d) Calculate the difference between the time Martha is walking and the time she is running.
Give your answer in hours and minutes correct to the nearest minute.