Question of the day

Day 1

Each week Dan drives two routes, route X and route Y.

One week he drives route X three times and route Y twice.
He drives a total of 134 miles that week.

Another week he drives route X twice and route Y five times.
He drives a total of 203 miles that week.

(a) Find the length of each route.

Take this information and write it as an equation

$3x + 2y = 134$

$2x + 5y = 203$

This gives us a pair of simultaneous equations.
You need to make the co-efficient of x the same, then subtract the equations from one another.

×2 $3x + 2y = 134$

×3 $2x + 5y = 203$

$6x + 4y = 268$

$6x + 15y = 609$

$6x + 15y = 609$

$6x + 4y = 268$ −

$11y = 341$ ÷ 11

$y = 31$

Now substitute y = 31 into 3x + 2y = 134

$3x + 2y = 134$

$3x + 2 \times 31 = 134$

$3x + 62 = 134$

Solve $x \rightarrow \times 3 \rightarrow + 62 \rightarrow 134$

$x \leftarrow \div 3 \leftarrow - 61 \leftarrow 134$

$x = 24$

(a) route X = ... 24 ..... miles

route Y = ... 31 ..... miles **[5]**

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