

Challenging Proportion question!

When I use fourteen of my gardeners to prune 350 rose trees on my terrace it takes 15 days. How long would it take to prune the 480 rose trees in my walled garden if I used eighteen of my gardeners?

This is a question that combines both direct proportion and inverse proportion. So take caution on which to use!

$$14 \text{ G} - 15 \text{ days} - 350 \text{ R}$$

$$18 \text{ G} - ? \text{ days} - 480 \text{ R}$$

Hint: Try to find out how long one gardener will take to prune 350R. Keep 350R constant.

$$\rightarrow 14 \text{ G} - 15 \text{ days} - 350 \text{ R} \text{ Keep } 350\text{R constant}$$

$$\rightarrow 1 \text{ G} - 15 \times 14 = 210 \text{ days} - 350 \text{ R}$$

$$18 \text{ G} - (210/18) \text{ days} - 350 \text{ R}$$

TIME is inversely proportional to MEN

I keep it like this because $(210/18)$ is not a nice number

$$350 \text{ R} - (210/18) \text{ days} - 18 \text{ G} \text{ Keep } 18\text{G constant now}$$

This part is direct proportion

$$\rightarrow 480 \text{ R} - (210/18) \times (480/350) - 18 \text{ G}$$

$$480 \text{ R} - 16 \text{ days} - 18 \text{ G}$$