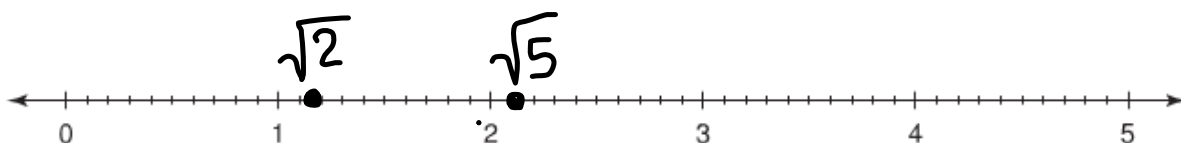


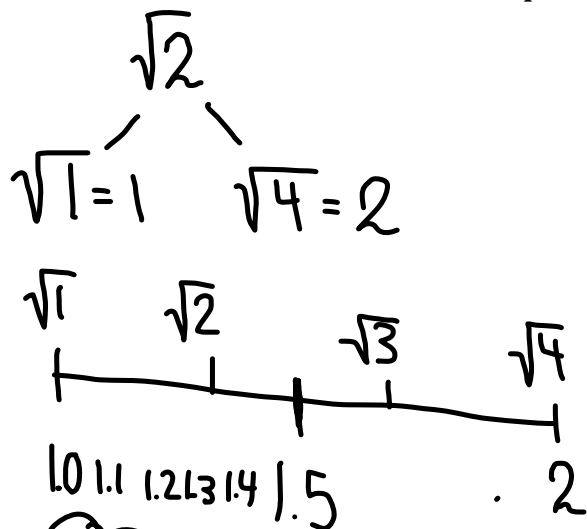
1.4 Estimating Square Roots – Notes

Place each square root on the number line to show its approximate value:

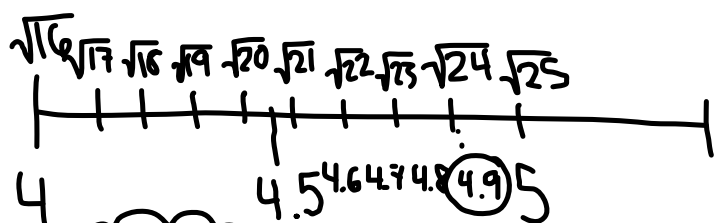
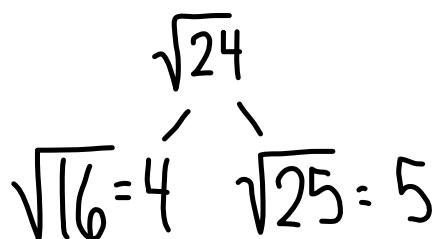
$$\sqrt{2}, \sqrt{5}, \sqrt{11}, \sqrt{18}, \sqrt{24}$$



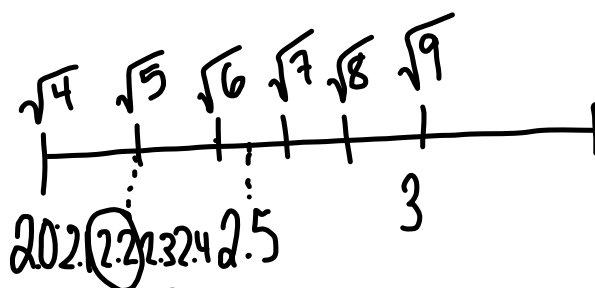
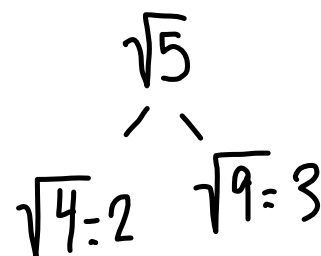
Write each estimated square root as a decimal.



$\sqrt{2} = 1.3$



$\sqrt{24} = 4.9$

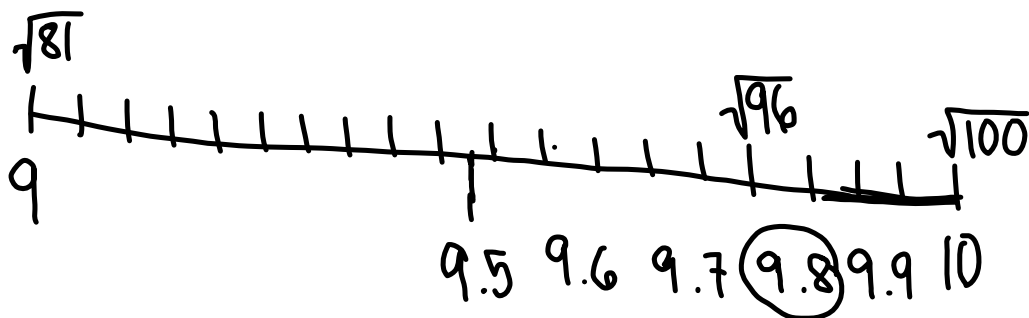


$\sqrt{5} = 2.2$

- ① Is it a perf. sq.? NO!
- ② What perf. sq's is it between? 16 and 25
- ③ mark the half way point

Example (1): Estimate $\sqrt{96}$

$$\sqrt{81} = 9 \quad \sqrt{100} = 10$$

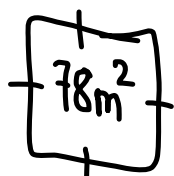


$$\sqrt{96} = 9.8$$

Example (2):

A square garden has area 78 m^2 .

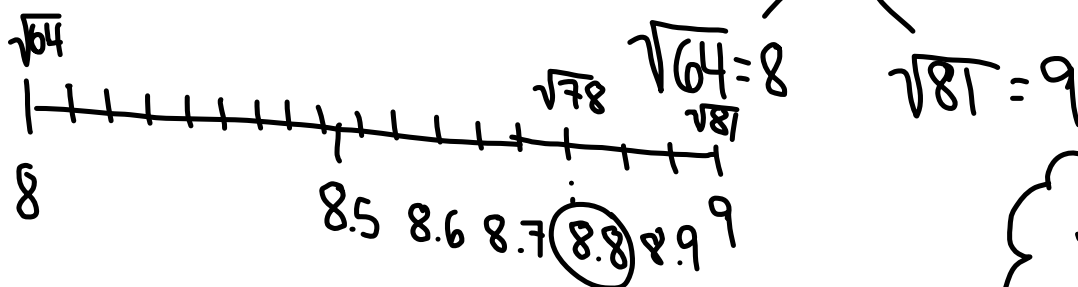
What are the approximate dimensions of the garden?



$$\text{Side Length} = \sqrt{\text{Area}}$$

$$= \sqrt{78}$$

Side length



So, the side length is approx. 8.8 m

Net-wire fencing is needed to keep out coyotes. About how much fencing would be needed around the garden?

$$\begin{aligned} \text{Perimeter} &= 4 \times \text{Side length} \\ &= 4 \times 8.8 \\ &= 35.2 \text{ m} \end{aligned}$$

He needs 35.2 m