

Corral Fencing Worksheet **Answer Key**

A rancher is building a corral for her horses. She needs to decide how big to make the corral and then how much fencing she needs to buy. The rancher wants to build a square-shaped corral.

1. If a square corral was built using 300 feet of fencing, what would be the area of the corral?

perimeter = 300 ft, so the side length is calculated by $300/4=75$ ft

area = side length²= (75ft)²= 5625 ft²

2. If a square corral was built using 600 feet of fencing, what would the area of the corral?

perimeter = 600 ft, so the side length is calculated by $600/4=150$ ft

area = side length²= (150ft)²= 22500 ft²

3. How does the area of the second corral compare to the area of the first corral?

$22500 \text{ ft}^2 / 5625 \text{ ft}^2 = 4$

The area of the second corral (using 600 feet of fencing) is four times bigger than the first corral (using 300 feet of fencing).

4. If a square corral was built using 900 feet of fencing, what would be the area of the corral?

perimeter = 900 ft, so the side length is calculated by $900/4=225$ ft

area = side length²= (225ft)²= 50625 ft²

5. From your results in the questions above, about the three corrals, what generalizations can you make? Make an *in-out table* to help you answer this question.

Alternate table answer:

Some students may make the “In” column be the side lengths, which results in finding the same relationship.

In (Perimeter)	Out (Area)
300 ft	5625 ft ²
600 ft	22500 ft ²
900 ft	50625 ft ²

When the perimeter is doubled, the area increases by a factor of four. When the perimeter is tripled, the area goes up by a factor of nine. The area increases by the square of the factor that the perimeter increases.