**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

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1. 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

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

22500 ft2/5625 ft2= 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).

1. 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

1. 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.

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| --- | --- |
| In (Perimeter) | Out (Area) |
| 300 ft | 5625 ft2 |
| 600 ft | 22500 ft2 |
| 900 ft | 50625 ft2 |

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.