

# Sample A

## Rabbits, Rabbits & More Rabbits

### Original Population:

A rabbit population can increase at a rapid rate if left unchecked. Assume that 10 rabbits are put in an enclosed wildlife ranch and the rabbit population triples each year for the next 5 years, as shown in the table.

Year	Rabbit population
0	10
1	30
2	90
3	270
4	810
5	2430

### New Population:

A group of rabbits of a different kind is placed in a second enclosed wildlife ranch. This new population of rabbits doubles each year if left unchecked.

How many rabbits would you need to start with in the new rabbit population to have at least the same number of rabbits in the original model after 5 years?

Answer: start with 80

Explain your thinking in the box provided.

$0 = 10$     $0 = 20$   
 $30^5$     $40$   
 $90$     $80 = 0$   
 $270$     $160^5$   
 $810$     $320^4$   
 $5 = 2430$     $640^3$   
                    $1280^2$   
                    $2560^1$

# Sample B

## Rabbits, Rabbits & More Rabbits

### Original Population:

A rabbit population can increase at a rapid rate if left unchecked. Assume that 10 rabbits are put in an enclosed wildlife ranch and the rabbit population triples each year for the next 5 years, as shown in the table.

Year	Rabbit population
0	10
1	30
2	90
3	270
4	810
5	2430

### New Population:

A group of rabbits of a different kind is placed in a second enclosed wildlife ranch. This new population of rabbits doubles each year if left unchecked.

How many rabbits would you need to start with in the new rabbit population to have at least the same number of rabbits in the original model after 5 years?

Answer: 750 rabbits

Explain your thinking in the box provided.

5	2430
4	1215
3	607.5
2	303.75
1	151.88
0	75.94

# Sample C

## Rabbits, Rabbits & More Rabbits

### Original Population:

A rabbit population can increase at a rapid rate if left unchecked. Assume that 10 rabbits are put in an enclosed wildlife ranch and the rabbit population triples each year for the next 5 years, as shown in the table.

Year	Rabbit population
0	10
1	30
2	90
3	270
4	810
5	2430

### New Population:

A group of rabbits of a different kind is placed in a second enclosed wildlife ranch. This new population of rabbits doubles each year if left unchecked.

How many rabbits would you need to start with in the new rabbit population to have at least the same number of rabbits in the original model after 5 years?

Answer: 75.93

Explain your thinking in the box provided.

~~24300~~  

$$\begin{array}{r|l}
 5 & 2430 \\
 \hline
 4 & 1215 \\
 \hline
 3 & 607.5 \\
 \hline
 2 & 303.75 \\
 \hline
 1 & 151.875 \\
 \hline
 0 & 75.93
 \end{array}$$

$$\begin{array}{r}
 2430 \\
 \hline
 5 \\
 \hline
 = 486
 \end{array}$$

Start with 75.93 OR 76 as it double up to be the same as the original model after 5 years.

# Sample D

Spring 2013/ Algebra

F-LE.5

## Rabbits, Rabbits & More Rabbits

### Original Population:

A rabbit population can increase at a rapid rate if left unchecked. Assume that 10 rabbits are put in an enclosed wildlife ranch and the rabbit population triples each year for the next 5 years, as shown in the table.

Year	Rabbit population
0	10
1	30
2	90
3	270
4	810
5	2430

### New Population:

A group of rabbits of a different kind is placed in a second enclosed wildlife ranch. This new population of rabbits doubles each year if left unchecked.

How many rabbits would you need to start with in the new rabbit population to have at least the same number of rabbits in the original model after 5 years?

Answer: 76 rabbits.

Explain your thinking in the box provided.

0) 10	
1) 30	0) 70 1/2
2) 90	1) 152 1/2
3) 270	2) 304 1/2
4) 810	3) 608 1/2
5) 2430	4) 1216 1/2
	5) 2432 1/2

# Sample E

## Rabbits, Rabbits & More Rabbits

### Original Population:

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Year	Rabbit population
0	10
1	30
2	90
3	270
4	810
5	2430

### New Population:

A group of rabbits of a different kind is placed in a second enclosed wildlife ranch. This new population of rabbits doubles each year if left unchecked.

How many rabbits would you need to start with in the new rabbit population to have at least the same number of rabbits in the original model after 5 years?

Answer: 76 Rabbits

Explain your thinking in the box provided.

Year	Rabbit Population
0	76
1	152
2	304
3	608
4	1216
5	2432

I doubled the numbers that comes after 76. I also did trial and error by doubling the numbers.

76  
152  
304  
608  
1216  
2432

76  
152  
304  
608  
1216  
2432

# Sample F

Spring 2013/ Algebra

F-LE.5

## Rabbits, Rabbits & More Rabbits

### Original Population:

A rabbit population can increase at a rapid rate if left unchecked. Assume that 10 rabbits are put in an enclosed wildlife ranch and the rabbit population triples each year for the next 5 years, as shown in the table.

Year	Rabbit population
0	10
1	30
2	90
3	270
4	810
5	2430

### New Population:

A group of rabbits of a different kind is placed in a second enclosed wildlife ranch. This new population of rabbits doubles each year if left unchecked.

How many rabbits would you need to start with in the new rabbit population to have at least the same number of rabbits in the original model after 5 years?

Answer: 5 rabbits to start with

Explain your thinking in the box provided.

Because instead of tripling the number 5x we are just doubling the number. So 5 would be a reasonable answer

# Sample G

Spring 2013/ Algebra

F-LE.5

## Rabbits, Rabbits & More Rabbits

### Original Population:

A rabbit population can increase at a rapid rate if left unchecked. Assume that 10 rabbits are put in an enclosed wildlife ranch and the rabbit population triples each year for the next 5 years, as shown in the table.

Year	Rabbit population
0	10
1	30
2	90
3	270
4	810
5	2430

### New Population:

A group of rabbits of a different kind is placed in a second enclosed wildlife ranch. This new population of rabbits doubles each year if left unchecked.

How many rabbits would you need to start with in the new rabbit population to have at least the same number of rabbits in the original model after 5 years?

Answer: \_\_\_\_\_

Explain your thinking in the box provided.

2430	2.37
1215	1.19
607.5	.59
303.75	.29
151.875	
75.94	
37.97	
18.98	
9.49	
4.75	