



## LINEAR EQUATIONS

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Mr Sanchez gets a small group of volunteers to rebuild part of the Iglesia de Nuestra Señora de la Limpia Concepción, one of the oldest churches in Costa Rica. Before it was finally finished in 1580, stonemasons constructed the church out of blocks of limestone using the traditional technique of calicanto. In the months before the project started, Mr. Sanchez produced 115 blocks of limestone. Once the project started, Mr. Sanchez and his team found they could produce 50 blocks each week. They estimate they will need about 12,000 blocks of limestone to finish this project.

1. Fill in the table.

Weeks ( $x$ )	0	1	2	3	4	5	6	...	$x$
Blocks of Limestone ( $y$ )									

2. What is the starting value? In other words, how many blocks did Mr. Sanchez have when he started building (week 0)? Explain how you found this amount.
3. From one week to the next, what is the rate of change? That is, how many blocks were added to the total? How do you know?
4. Write an equation of a line, in slope-intercept form ( $y = mx + b$ ) that models this situation. In slope-intercept form,  $m$  is the rate of change and  $b$  is the starting value.
5. How many blocks will Mr. Sanchez and his volunteers have constructed in the church on week 20? Show your work.

6. After how many weeks will he have enough blocks of limestone to rebuild the church? How many years will that take?