

Applications of Linear Equations

Learning Objectives

- Set up a linear equation to solve a real-world problem
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Set up a linear equation to solve a real-world problem

1. Tanesha has been offered two different sales jobs. At the Xanadu Company they are offering her a base salary of \$40,000, and a commission of 2% on all sales. The Viceroy Corporation is offering her a similar position with a base salary of \$45,000, and 1.5% commission on all sales.
 - a. Create a linear equation to model the income potential of both positions based on sales.

 - b. How much will she have to sell at Xanadu to earn the same amount of money as she would at Viceroy?

- c. If average sales per salesperson is estimated to be around \$750,000, which company should she choose, and what would be her expected salary?

ANSWER KEY

1. a. $y_{Xanadu} = 40,000 + 0.02x$, $y_{Viceroy} = 45,000 + 0.015x$. b. Tanesha would need to make \$1,000,000 in sales to make \$60,000 at both jobs. c. She should choose the Viceroy job, and would expect to make \$56,250.