

## Linear Relationships and Constant Rates of Change

<b>Abstract Linear Equations:</b> $y = mx + b$	<b>Real Life Linear Relationships</b> $Y = (\text{Ave Rate of Change})x + \text{Vertical Intercept}$
<p>1) Given a slope of 2 and a y-intercept of -1 find the equation of the line.</p> <p>2) Given a slope of - 0.5 and a y-intercept of 1.3 find the equation of the line.</p>	<p>1) For a sanitation worker in one Massachusetts town the starting salary is \$22,000 with an annual increase of \$2500. Write an equation for a person's salary S after t years.</p> <p>2) The daily cost of renting a car from one rental agency is \$27 plus 12 cents per mile. Write an equation for the Daily cost of the rental.</p>
<p>1) Write the equation of the line that has a slope of 2 and passes through the point (- 1,3).</p> <p>2) Write the equation of the line that has a slope of -0.8 and passes through the point (5,-3).</p>	<p>1) The median height in inches of children between 2 and 12 years of ages increase by 2.5 inches each year. If the median height of a 2 year old is 35 inches, write an equation expression the relationship between height H and age A.</p> <p>2) The median hourly salary for American adults in 1990 increased by \$1.60 per hour for every additional year of education the person had completed. A person with 10 years of education had a median salary of \$8.50 per hour. Write an equation for the relationship between salary and years of education.</p>
<p>1) Find the equation of the line that passes through the points (-1,4) and (4, -11).</p> <p>2) Find the equation of the line that passes through the points (-3, -6) and (9, 10).</p>	<p>1) A Cambridge condo cost \$73,000 in 1977. The price for the same condo in 1999 was \$288,000. Assuming the value of this condo increased by a constant annual amount , write an equation for the value of the condo as a function of time ( let t = years since 1977).</p> <p>2) A person weighing 160 lbs. who consumes 2 12oz. beers has a blood alcohol concentration of 0.047. The same person after consuming 6 12 oz. beers has a blood alcohol concentration of 0.141. Express the relationship between blood alcohol concentration and number of beers consumed in equation form.</p>





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