

## Linear Equations – Review and Applications

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1. Write the equation of a line passing through  $A(4,1)$  having a slope of  $-\frac{1}{2}$ . Write the equation in both slope-intercept form and standard form.
  2. Write the equation of a line passing through  $A(5,6)$  and  $B(9,12)$ . Write the equation in both slope-intercept form and standard form.
  3. Write the equation of a line passing through  $(-1,-3)$  and parallel to the line  $2x - 3y = 12$ . Write the equation in both slope-intercept form and standard form.
  4. Write the equation of a line passing through  $(5,3)$  and perpendicular to the line  $3x + 4y - 24 = 0$ . Write the equation in both slope-intercept form and standard form.
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17. The Video Vault rents DVDs for \$3.00 each and has no membership fee. Videorenters rents DVDs for \$2 each but has a \$15 membership fee.
    - a) Write an equation for each situation.
    - b) Graph both equations on the same set of axes. Find the point of intersection.
    - c) What does the point of intersection mean in this case?
  4. A promoter is holding a video dance. Tickets cost \$15 per person, and he has given away 10 free tickets to radio stations.
    - a) Create the linear relation that models the money the promoter will earn in ticket sales in terms of the number of people attending the dance.
    - b) Graph the linear relation.
  4. David has two part-time jobs. He earns \$14/h at one and \$11/h at the other. David wants to know how many hours it will take him to earn \$1000.
    - a) Find two combinations of the numbers of hours David could work at each job to earn \$1000.
    - b) Graph the relation.
  6. Justin charges \$21 per linear foot to install a wood fence. It costs him \$19 per linear foot plus \$4000 to purchase materials and hire installers each month. How many linear feet of fencing would he need to install each month to break even?