

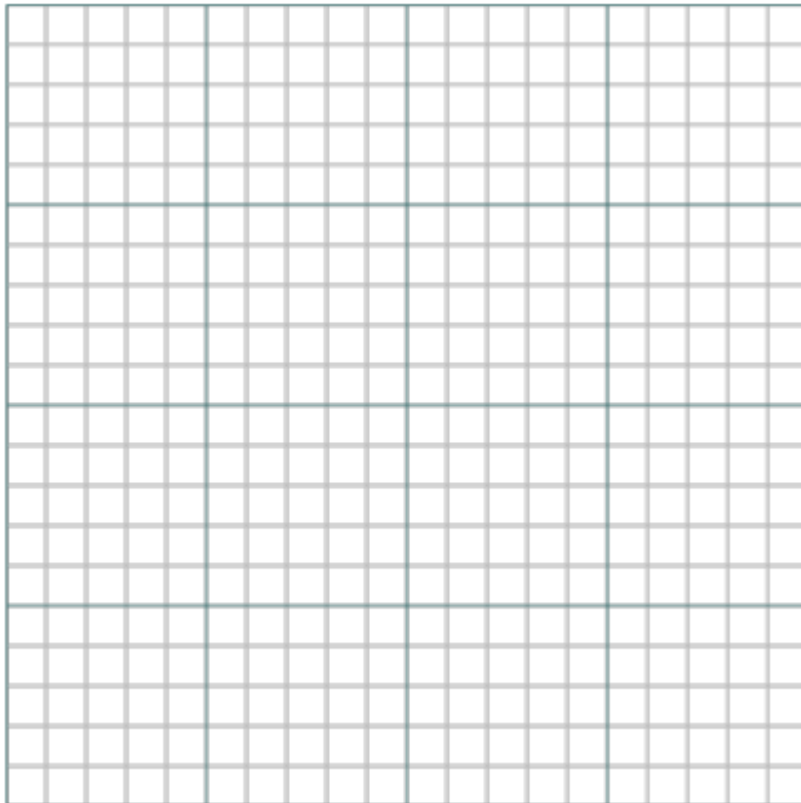
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Algebra
Chapter 1.5

Make a hand-drawn graph. Identify the domain and range.

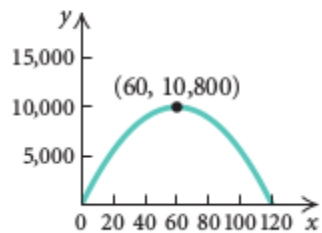
$$54. f(x) = \begin{cases} 4, & \text{for } x \leq -2, \\ x + 1, & \text{for } -2 < x < 3, \\ -x, & \text{for } x \geq 3 \end{cases}$$

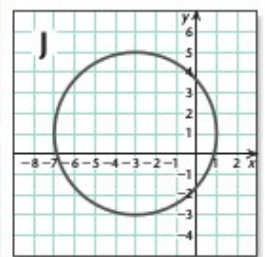
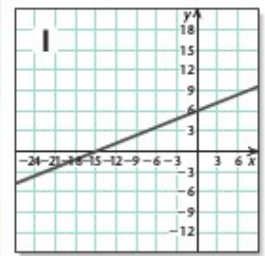
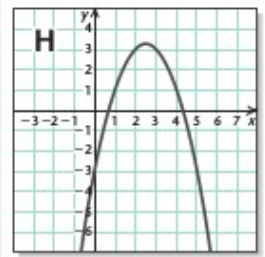
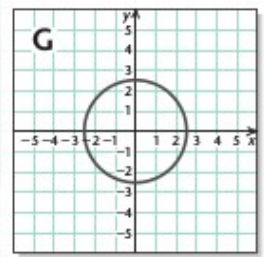
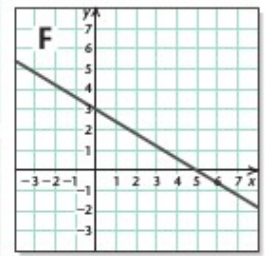
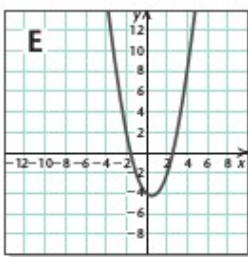
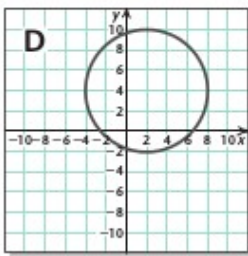
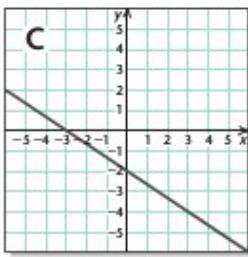
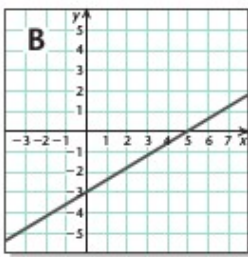
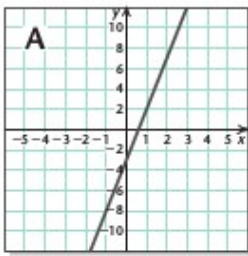


42. *Corral Design.* A rancher has 360 yd of fencing with which to enclose two adjacent rectangular corrals, one for sheep and one for cattle. A river forms one side of the corrals. Suppose the width of each corral is x yards.



- a) Express the total area of the two corrals as a function of x .
- b) Find the domain of the function.
- c) Using the graph shown below, determine the dimensions that yield the maximum area.





Visualizing the Graph

Match the equation with its graph.

1. $y = -x^2 + 5x - 3$
2. $3x - 5y = 15$
3. $(x - 2)^2 + (y - 4)^2 = 36$
4. $y - 5x = -3$
5. $x^2 + y^2 = \frac{25}{4}$
6. $15y - 6x = 90$
7. $y = -\frac{2}{3}x - 2$
8. $x^2 + y^2 + 6x - 2y - 6 = 0$
9. $3x + 5y = 15$
10. $y = x^2 - x - 4$

Answers on page A-4

REMINDER:

The Equation of a Circle

The equation of a circle with center (h, k) and radius r , in standard form, is

$$(x - h)^2 + (y - k)^2 = r^2.$$