H1

A

Solve the inequalities in Exercises below expressing the solution sets as intervals or unions of intervals. Also, show each solution set on the real line.

19. $|x| < 2$

22. $|t + 2| < 1$

27. $\left| 3 - \dfrac{1}{x} \right| < \dfrac{1}{2}$

B

43. Do not fall into the trap $|-a| = a$. For what real numbers a is this equation true? For what real numbers is it false?

44. Solve the equation $|x - 1| = 1 - x$.

51. For any number a, prove that $|-a| = |a|$.

C

In Exercises below write an equation for each line described.

17. Passes through $(-1, 1)$ with slope -1

18. Passes through $(2, -3)$ with slope $1/2$

19. Passes through $(3, 4)$ and $(-2, 5)$

D

In Exercises below find the line's x- and y-intercepts and use this information to graph the line.

31. $3x + 4y = 12$ **32.** $x + 2y = -4$

E

[Ex 1.3, p26]

In Exercises below find the domain and range of each function.
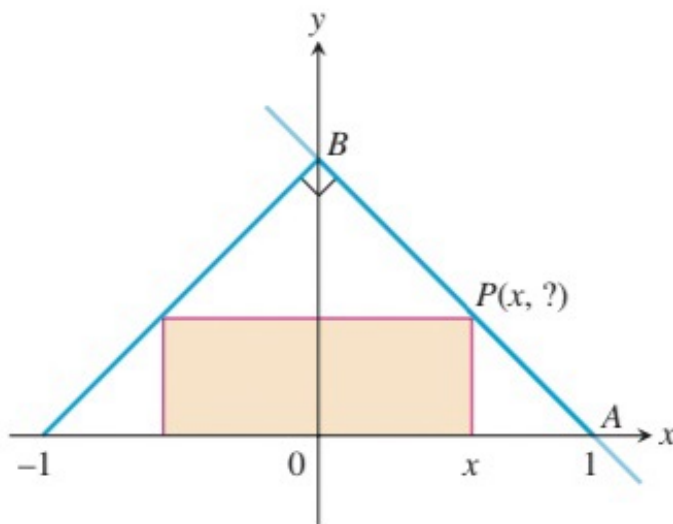
1. $f(x) = 1 + x^2$ **2.** $f(x) = 1 - \sqrt{x}$

3. $F(t) = \dfrac{1}{\sqrt{t}}$

F

38. The figure shown here shows a rectangle inscribed in an isosceles right triangle whose hypotenuse is 2 units long.

a. Express the y-coordinate of P in terms of x. (You might start by writing an equation for the line AB.)

b. Express the area of the rectangle in terms of x.

c. Make a graph of the area R as a function of x.