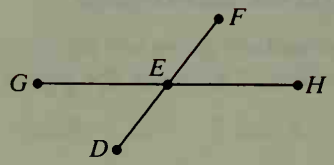
E is the midpoint of $\overline{DF}$. Find the value of x.

33. $DE = 5x + 3$, $EF = 33$

34. $DE = 45$, $EF = 5x - 10$

35. $DE = 3x$, $EF = x + 6$

36. $DE = 2x - 3$, $EF = 5x - 24$



Exs. 33–40

Find the value of y.

37. $GE = y$, $EH = y - 1$, $GH = 11$

38. $GE = 3y$, $GH = 7y - 4$, $EH = 24$

Find the value of z. Then find GE and EH and state whether E is the midpoint of $\overline{GH}$.

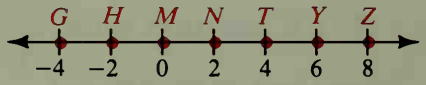
39. $GE = z + 2$, $GH = 20$, $EH = 2z - 6$

40. $GH = z + 6$, $EH = 2z - 4$, $GE = z$

Name the graph of the given equation or inequality.

Example **a.** $x \geq 2$ **b.** $4 \leq x \leq 6$

Solution **a.** $\overrightarrow{NT}$ **b.** $\overline{TY}$



Exs. 41–45

41. $-2 \leq x \leq 2$ **42.** $x \leq 0$ **43.** $|x| \leq 4$ **44.** $|x| \geq 0$ **45.** $|x| = 0$

In Exercises 46 and 47 draw a diagram to illustrate your answer.

46. a. On $\overrightarrow{AB}$, how many points are there whose distance from point A is 3 cm?

b. On $\overleftrightarrow{AB}$, how many points are there whose distance from point A is 3 cm?

C **47.** On $\overrightarrow{AB}$, how many points are there whose distance from point B is 3 cm?

48. The Ruler Postulate suggests that there are many ways to assign coordinates to a line. The Fahrenheit and Celsius temperature scales on a thermometer indicate two such ways of assigning coordinates. A Fahrenheit temperature of 32° corresponds to a Celsius temperature of 0°. The formula, or rule, for converting a Fahrenheit temperature F into a Celsius temperature C is

$$C = \frac{5}{9}(F - 32).$$

a. What Celsius temperatures correspond to Fahrenheit temperatures of 212° and 98.6°?

b. Solve the equation above for F to obtain a rule for converting Celsius temperatures to Fahrenheit temperatures.

c. What Fahrenheit temperatures correspond to Celsius temperatures of −40° and 2000°?