

Section 1.1 Lines and Increments

Use Calculator page Increments

How do we make Δx change? moved a pt. left or right

How do we make Δy change? moved a pt. up or down

What do Δx & Δy represent?

change in x & change in y

Write the equation of the line.

$y = mx + b$ slope - intercept
 $y - y_1 = m(x - x_1)$ pt. slope
 $y = m(x - x_1) + y_1$

Equations of Lines

slope

intercepts

x -intercept - crossing x -axis $(\quad, 0)$
 y -axis $(0, \quad)$

point slope

slope intercept

standard

$Ax + By = C$
 $A, B, C \neq \text{fraction}$

horizontal lines

vertical lines

$y = \#$
 $x = \#$

parallel slopes

perpendicular slopes

same slope

opp. reciprocals

Write the equation the line:

$m = -3$ and through $(4, -2)$

$$y = -3(x-4) + -2$$
$$y = -3x + 12 - 2$$

$$y = -3x + 10$$

through $(-2, 1)$ and $(3, -6)$

$$m = \frac{\Delta y}{\Delta x} = \frac{1 + 6}{-2 - 3} = \frac{7}{-5}$$

$$y = \frac{-7}{5}(x-3) - 6$$

Write the equation of:

the vertical line and the horizontal line through $(-7, 9)$

$$x = -7$$

$$y = 9$$

Find the equation of the line: a) parallel and b) perpendicular to $2x+3y=9$ through the point $(2, 2)$

$$a) y = -\frac{2}{3}(x-2) + 2$$

$$y = -\frac{2}{3}x + \frac{10}{3}$$

$$b) y = \frac{3}{2}(x-2) + 2$$

$$y = \frac{3}{2}x - 1$$

Find the relationship between Fahrenheit and Celsius temperature. Find the Celsius equivalent of 90 degrees Fahrenheit. Find the Fahrenheit equivalent of -5 degrees Celsius.

$$F = \frac{9}{5}C + 32$$

$$90^\circ F \rightarrow \frac{5}{9} \cdot 58$$

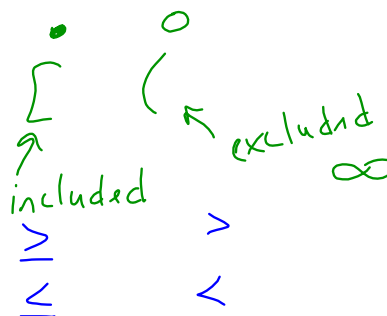
$$32.22^\circ C$$

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

$$-5^\circ C = 23^\circ F$$

windows sizes of the graphs in the book

interval notation



rates of change

mph, \$ per item

$$\frac{m}{h}$$