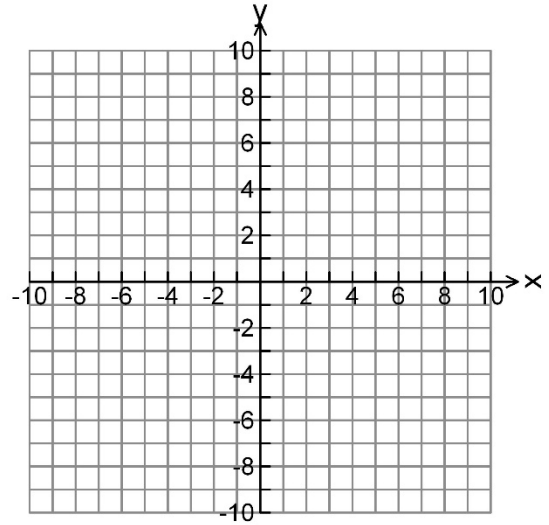


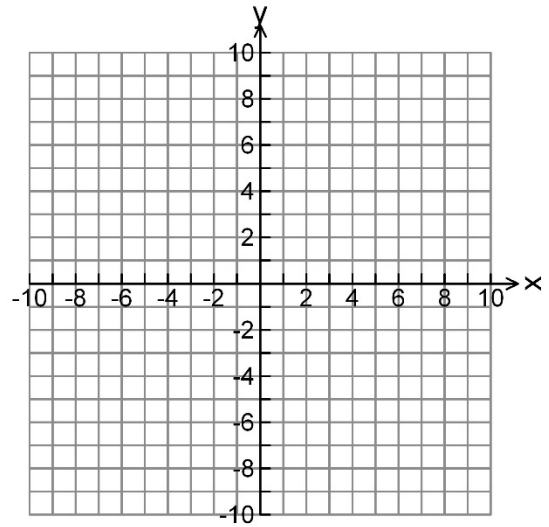
Section 2.4: Linear Functions

Video 1

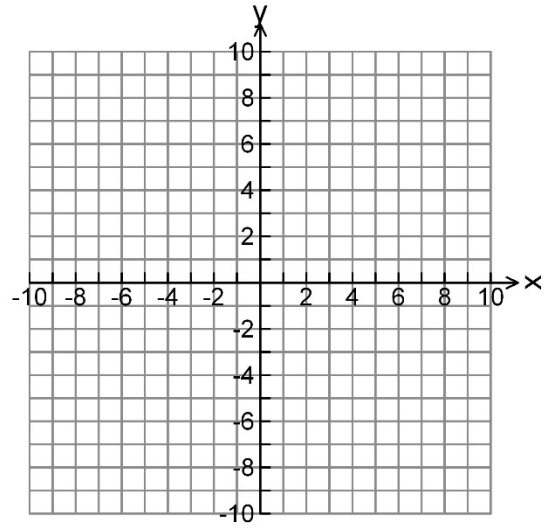
1) Graph $f(x) = \frac{3}{2}x - 6$ by finding its intercepts.



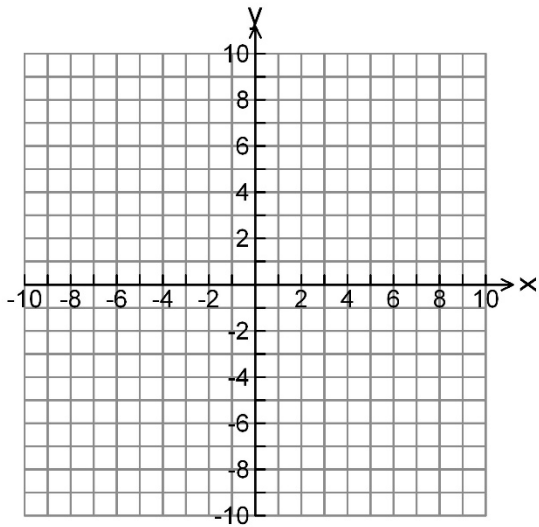
2) Graph $2x + 3y = 9$ by finding its intercepts.



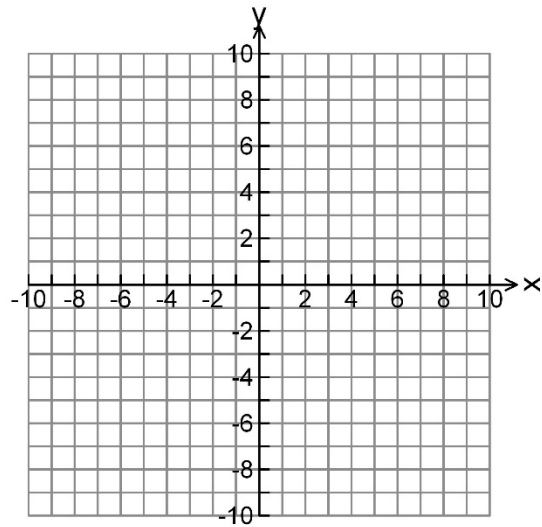
3) Graph $3x - 4y = 0$ by finding its intercepts.



4) Graph $f(x) = 2$.



5) Graph $x = 5$.



Video 2

The **slope** of a line measures its steepness and orientation. The slope is a ratio of *rise* to *run*, and measures the change in y over the change in x .

Slope Formula

6) Find the slope of a line passing through the two given points.

a) $(2,7)$ and $(6,13)$

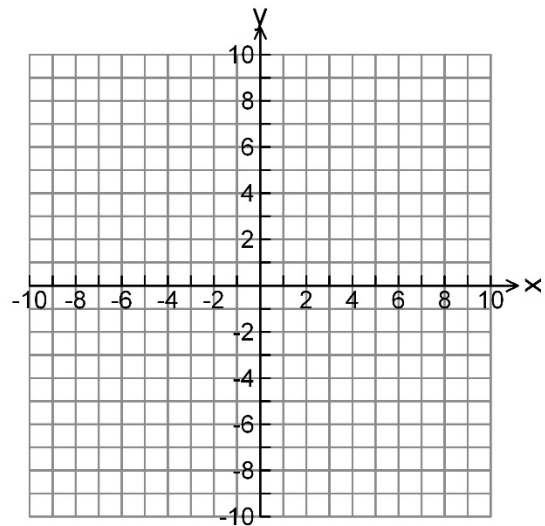
b) $(-5,-4)$ and $(1,-14)$

7) Find the slope of the given line.

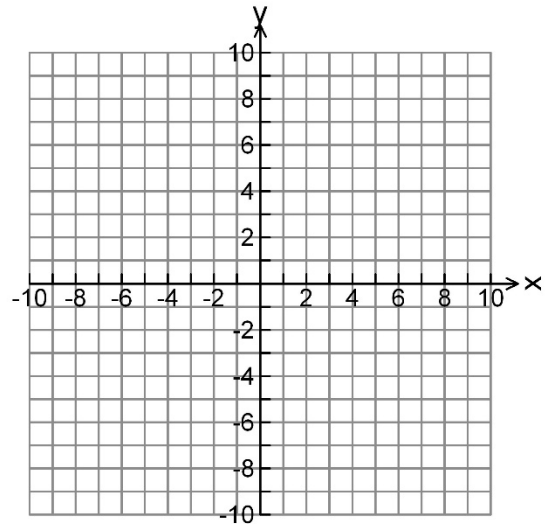
a) Horizontal, $y = 4$

b) Vertical, $x = -3$

8) Find the slope of the line $2x + 5y = 15$ and use the slope to graph the line.



9) Graph the line passing through the point $(2, -4)$ with slope $m = \frac{3}{5}$.



Video 3

Average Rate of Change

10) In 1990, the average income per person in the US was \$39,900. By 2020, it had risen to \$63,200. (Income adjusted for inflation.)

Find the average rate of change in US income per person for this time period.

Average Rate of Change for $f(x)$ on the interval $[a,b]$: $\frac{f(b) - f(a)}{b - a}$

11) Find the average rate of change for $f(x) = 3x - 7$ on the interval $[2,8]$.

12) Find the average rate of change for $f(x) = x^2$ on the given interval.

a) $[-1,4]$

b) $[-3,-1]$

c) $[-2,2]$