6.2 - Slope-Intercept Form

Vocabulary:

- Linear Function : forms a Straight line
- Parent Function
- y-Intercept

- Slope-Intercept Form

$$
\begin{aligned}
& y=m x+b \\
& \uparrow \\
& \text { slope } \quad y \text {-intercept }
\end{aligned}
$$

(1) EXAMPLE What are the slope and $y$-intercept of $y=2 x-3$ ?

$$
\begin{aligned}
& m=2 \\
& b=-3
\end{aligned}
$$

Find the slope of yintercept.
\#1. $y=-2 x+1$

$$
\begin{gathered}
m=-2 \\
b=1
\end{gathered}
$$

\#3.

$$
\begin{aligned}
& y=\left\lvert\, x-\frac{5}{4} \quad \begin{array}{l}
m=1 \\
b=-5 \\
y=3 x \\
m=3 \\
b=0
\end{array}\right.
\end{aligned}
$$

$$
b=-5 / 4
$$

(2) Example Write an equation of the line with (slope $\frac{2}{5}$ and $y$-intercept 4.

$$
\begin{aligned}
& y=m x+b \\
& y=\frac{2}{5} x+4
\end{aligned}
$$

Write an equation in slope-intercept form of a line with the following slope a $y$-inte rapt.
\# $11 . \quad m=3 \quad b=2 / 9 \quad y=3 x+2 / 9$
\#15. $m=-2 / 3 \quad b=5 \quad y=-2 / 3 x+5$

Write an equation for the line.

$y=m x+b$

$\uparrow_{\text {slope }} \uparrow_{y \text {-int }}$
(
4) EXAMPLE Graph $y=\frac{1}{3} x-2$.


$$
\frac{\text { rise }}{\text { run }}
$$

Graph.
\#29. $y=2 / 3 x-1$
\# 33. $y=-x+2$

$$
\frac{-1}{I_{\text {ruse }}}
$$



5 example The base pay for a used car salesperson is $\$ 300$ per week. The salesperson also earns $15 \%$ commission on sales made. The equation $t=300+0.15$ s relates total earnings $t$ to sales $s$. Graph the equations.

$$
\begin{aligned}
& \frac{15}{100} \div 5 \\
& \frac{3 \text { rise }}{20} \text { run }
\end{aligned}
$$



Homework: pg. 320 \#4, 6, 12, 18, 22, 26, 32, 38, 40, 62, 84, 88

