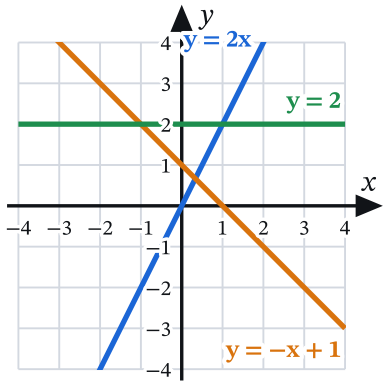
Names (pair) _____ Date _____

Increasing, Decreasing and Scale

Example



$y = 2x$: $m = 2 > 0$, the function is **increasing**.
$y = -x + 1$: $m = -1 < 0$, it is **decreasing**.
$y = 2$: $m = 0$, it is **constant**.

Remember

$m > 0$: increasing; $m < 0$: decreasing; $m = 0$: constant. The bigger $|m|$, the steeper the line (with the same scale on both axes). Changing the scale changes the picture, not m.

1 IN PAIRS Increasing, decreasing or constant? Circle.

$y = 3x - 1$ — **increasing / decreasing / constant**

$y = -2x + 5$ — **increasing / decreasing / constant**

$y = \frac{1}{2}x$ — **increasing / decreasing / constant**

$y = 4$ — **increasing / decreasing / constant**

$y = -\frac{x}{3} + 2$ — **increasing / decreasing / constant**

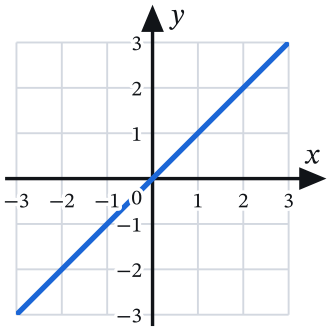
$y = -0.5x$ — **increasing / decreasing / constant**

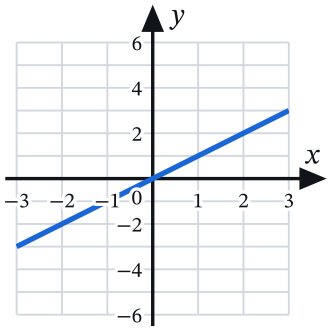
2 IN PAIRS Order the lines from the steepest to the least steep.

$y = 3x$, $y = -4x$, $y = \frac{1}{2}x$, $y = -x$ → ☐ ☐ ☐ ☐

Names (pair) _____ Date _____

3 ON YOUR OWN A line is drawn in both pictures. Find m in each. Is it the same line? Why do they look different?





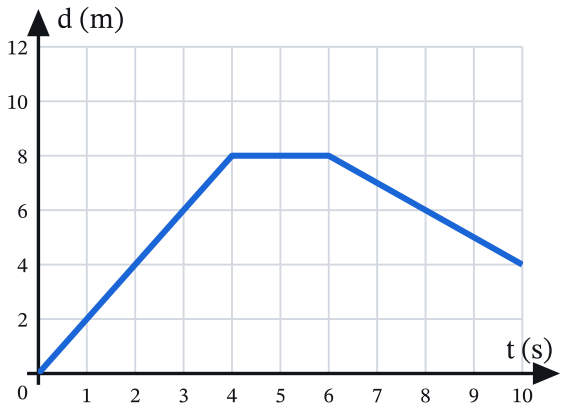
$m =$ ☐ $m =$ ☐

---

4 IN PAIRS **Find the mistake.** Iva: "The line $y = -3x$ is less steep than $y = 2x$ because $-3 < 2$."

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5 ON YOUR OWN The graph shows how Ana moves. Describe each part and work out her speed in the first part.



0 – 4 s: ☐

4 – 6 s: ☐

6 – 10 s: ☐

speed in 0 – 4 s: ☐ m/s

The Line Explorer app · otooly.com/line-explorer

Display → **Axis scale**: change the scale and watch m. Does it change?

The Motion Graphs app · otooly.com/motion-graphs

Draw Ana's graph from task 5 and press play. When does Ana walk back?

★ ON YOUR OWN **Exit card.** $y = -2x + 7$: **increasing** / **decreasing** / **constant**. Is it steeper than $y = x$? **yes** / **no**