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LT11: I can use the first and second derivative of a function to identify intervals of increase/decrease and concavity.

1. Analyze the graph of  $f'(x)$ , the first derivative of  $f$ , and then list

a. Intervals where  $f$  is increasing

$$(-2, 0) \cap (1, \infty)$$

b. Intervals where  $f$  is decreasing

$$(-\infty, -2) \cup (0, 1)$$

c. Intervals where  $f$  is concave up

$$(-\infty, -1.8) \cup (-1, -0.25) \cup (0.5, \infty)$$

d. Intervals where  $f$  is concave down

$$(-1.8, -1) \cup (0.25, 0.5)$$

