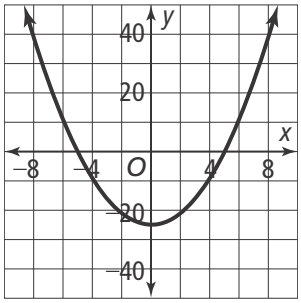
1-1 Additional Practice

Key Features of Functions

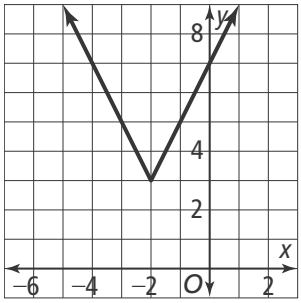
For Items 1–2, identify the following information for the function of each graph:

1.



Domain: **(−∞, ∞)**
Range: **[−25, ∞)**
x-intercepts: **−5, 5**
y-intercepts: **−25**
Interval positive: **(−∞, −5) and (5, ∞)**
Interval negative: **(−5, 5)**
Interval increasing: **(0, ∞)**
Interval decreasing: **(−∞, 0)**
Average rate of change over [−5, 0]: **−5**

2.



Domain: **(−∞, ∞)**
Range: **[3, ∞)**
x-intercepts: **none**
y-intercepts: **7**
Interval positive: **(−∞, ∞)**
Interval negative: **none**
Interval increasing: **(−2, ∞)**
Interval decreasing: **(−∞, −2)**
Average rate of change over [−2, 0]: **2**

3. Sketch a linear graph given the following key features:

Domain: (−∞, ∞)

Range: (−∞, ∞)

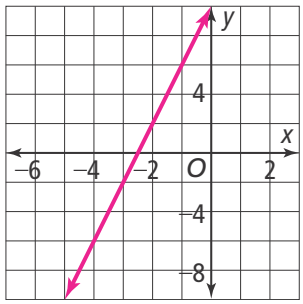
Increasing: (−∞, ∞)

x-intercepts: −2.5

y-intercept: 10

Positive: (−2.5, ∞)

Negative: (−∞, −2.5)



4. Chiang is filling a 50 ft^3 container with water at a rate of 0.5 ft^3/min. Interpret the key features for this situation. **Domain: [0, 100]; Range: [0, 50] Increasing: [0, 100]; Decreasing: N/A; *x*-intercepts: 0; *y*-intercepts: 0; Positive: (0, 100]; Negative: N/A.**