

Turning Points

1 Turning Points

1. Find and classify the turning point of each of the following functions:

- (a) $(-3, 12)$ Minimum
- (b) $(1, 2)$ Minimum
- (c) $(-2, 0)$ Minimum
- (d) $(-2, -16)$ Minimum
- (e) $(2, -1)$ Minimum
- (f) $(-1, 16)$ Maximum
- (g) $(5, 25)$ Maximum
- (h) $(2, 13)$ Maximum
- (i) $(\frac{3}{2}, -\frac{1}{2})$ Maximum

2. Find and classify the turning points of the following functions:

- (a) $(-3, 32)$ max $(1, 0)$ min
- (b) $(1, 2)$ max $(2, 1)$ min
- (c) $(2, -32)$ min $(-2, 32)$ max
- (d) $(-3, 3)$ max $(-1, -1)$ min
- (e) $(4, -78)$ min $(-2, 30)$ max
- (f) $(1, 5)$ min $(2, 6)$ max
- (g) $(3, 37)$ max $(-1, 5)$ min
- (h) $(3, 96)$ max $(-2, -29)$ min

2 Increasing and Decreasing Functions

1. For what range of values are the following functions increasing?

- (a) $x > 2$
- (b) $x > -3$
- (c) $x < -1$
- (d) $x < \frac{9}{4}$

2. For what range of values are the following functions decreasing?

(a) $x < 3$

(b) $x < -\frac{7}{2}$

(c) $x > 4$

(d) $x > \frac{19}{6}$

3. Decreasing

4. Increasing

5. Increasing

6. Decreasing

7. $(-3, 32)$ max $(1, 0)$ min
Decreasing: $-3 < x < 1$

8. $(1, 2)$ max $(2, 1)$ min
Decreasing: $1 < x < 2$

9. $(3, 96)$ max $(-2, -29)$ min
Increasing: $-2 < x < 3$