

SM2H--1.3 answers 2019-2020

1. x-intercept = (2, 0); y-intercept = (0, -6)
 2. x-intercept = (3, 0); y-intercept = (0, 3)
 3. x-intercept = (-4.5, 0); y-intercept = (0, -9)
 4. x-intercept = (-12, 0); y-intercept = (0, 8)
 5. x-intercept = (-2, 0); y-intercept = $(0, \frac{6}{7})$
 6. x-intercept = (7.5, 0); y-intercept = (0, -3)
 7. x-Intercept(s): (1, 0); (7, 0), y-Intercept: (0, -7)
 Relative max Point: (4, 9), Relative max value: 9
 Relative min point: N/A, Relative min value: N/A
 Absolute max Point: (4, 9), Absolute max value: 9
 Absolute min point: N/A, Absolute min value: N/A
 Positive: (1, 7), Negative: $(-\infty, 1) \cup (7, \infty)$
 Increasing: $(-\infty, 4)$, Decreasing: $(4, \infty)$
 Constant: N/A

$$\lim_{x \rightarrow -\infty} f(x) = -\infty : \lim_{x \rightarrow \infty} f(x) = -\infty$$

8. x-Intercept(s): N/A, y-Intercept: (0, -3)
 Relative max Point: (-4, -1), Relative max value: -1
 Relative min point: N/A, Relative min value: N/A
 Absolute max Point: (-4, -1), Absolute max value: -1
 Absolute min point: N/A, Absolute min value: N/A
 Positive: N/A Negative: $[-4, \infty)$
 Increasing: N/A Decreasing: $(-4, \infty)$
 Constant: N/A

$$\lim_{x \rightarrow -\infty} f(x) = dne : \lim_{x \rightarrow \infty} f(x) = -\infty$$

9. x-Intercept(s): (-5, 0); (5, 0), y-Intercept: (0, -5)
 Relative max Point: N/A, Relative max value: N/A
 Relative min point: (0, -5), Relative min value: -5
 Absolute max Point: N/A, Absolute max value: N/A
 Absolute min point: (0, -5), Absolute min value: -5
 Positive: $(-\infty, -5) \cup (5, \infty)$ Negative: $(-5, 5)$
 Increasing: $(0, \infty)$ Decreasing: $(-\infty, 0)$
 Constant: N/A

$$\lim_{x \rightarrow -\infty} f(x) = \infty : \lim_{x \rightarrow \infty} f(x) = \infty$$

10. x-Intercept(s): (0, 0), y-Intercept: (0, 0)
 Relative max Point: N/A, Relative max value: N/A
 Relative min point: N/A, Relative min value: N/A
 Absolute max Point: N/A, Absolute max value: N/A
 Absolute min point: N/A, Absolute min value: N/A
 Positive: $(-\infty, 0)$ Negative: $(0, \infty)$
 Increasing: N/A Decreasing: $(-\infty, \infty)$
 Constant: N/A

$$\lim_{x \rightarrow -\infty} f(x) = \infty : \lim_{x \rightarrow \infty} f(x) = -\infty$$

11. x-Intercept(s): (-1.73, 0); (0, 0); (1.73, 0)
 y-Intercept: (0, 0)
 Relative Max Point: (-1, 2), Relative Max Value: 2
 Relative Min Point: (1, -2), Relative Min Value: -2
 Absolute Max Point: N/A, Absolute Max Value: N/A
 Absolute Min Point: N/A, Absolute Min Value: N/A
 Positive: $(-1.73, 0) \cup (1.73, \infty)$
 Negative: $(-\infty, -1.73) \cup (0, 1.73)$
 Increasing: $(-\infty, -1) \cup (1, \infty)$
 Decreasing: $(-1, 1)$
 Constant: N/A

$$\lim_{x \rightarrow -\infty} f(x) = -\infty : \lim_{x \rightarrow \infty} f(x) = \infty$$

12. x-Intercept(s): (-6, 0); (-1, 0); (1, 0); (5, 0),
 y-Intercept: (0, 1)
 Relative Max Point: (-7, 3), (0, 1), Relative Max Value: 1, 3, 8
 Relative Min Point: (3, -8), Relative Min Value: -8, -3
 Absolute Max Point: N/A, Absolute Max Value: 8
 Absolute Min Point: (3, -8), Absolute Min Value: -8
 Positive: $[-7, -6) \cup (-1, 1) \cup (5, \infty)$
 Negative: $(-6, -1) \cup (1, 5)$
 Increasing: $(-2, 0) \cup (3, 7)$
 Decreasing: $(-7, -5) \cup (0, 3)$
 Constant: $(-5, -2) \cup (7, \infty)$

$$\lim_{x \rightarrow -\infty} f(x) = dne : \lim_{x \rightarrow \infty} f(x) = 8$$

13. Domain: $(-\infty, \infty)$ Range: $[-6, \infty)$,
 x-Intercept(s): (-7.5, 0); (-0.5, 0), y-Intercept: (0, 2)
 Relative max point: N/A, Relative max value: N/A
 Relative min Point: (-4, -6), Relative min value: -6
 Absolute max point: N/A, Absolute max value: N/A
 Absolute min Point: (-4, -6), Absolute min value: -6
 Positive: $(-\infty, -7.5) \cup (-0.5, \infty)$,
 Negative: $(-7.5, -0.5)$
 Increasing: $(-4, \infty)$, Decreasing: $(-\infty, -4)$
 Constant: N/A Symmetry: neither

$$\text{Left End Behavior: } \lim_{x \rightarrow -\infty} f(x) = \infty$$

$$\text{Right End Behavior: } \lim_{x \rightarrow \infty} f(x) = \infty$$

14. Domain: $(-\infty, -9) \cup [-8, 2)$

Range: $(-8, \infty)$,

x-Intercept(s): $(-11, 0); (-7, 0)$, y-Intercept: $(0, 2)$

Relative max Point: $(2, 10)$, Relative max value: 5, 10

Relative min point: $(-8, -5), (-1, 1)$, Relative min value: -5, 1

Absolute max Point: N/A, Absolute max value: N/A

Absolute min point: N/A, Absolute min value: N/A

Positive: $(-\infty, -11) \cup (-7, 2]$,

Negative: $(-11, -9) \cup [-8, -7)$

Increasing: $(-8, -6) \cup (-1, 2)$,

Decreasing: $(-\infty, -9) \cup (-3, -1)$

Constant: $(-6, -3)$ Symmetry: neither

Left End Behavior: $\lim_{x \rightarrow -\infty} f(x) = \infty$

Right End Behavior: $\lim_{x \rightarrow -\infty} f(x) = dne$

15. $\frac{11}{8}$

16. $\frac{5}{3x}$

17. $\frac{x}{2y}$

18. $\frac{13}{6x}$

19. $\frac{4}{5}$

20. $\frac{4}{x}$