Page 97 Exercise 2.2 7-21 orders

1.
$$\lim_{X \to 2} \frac{x^2 - 4}{x - 2} = \boxed{4}$$
1.9 | 1.99 | 2.01 | 3.9 | 3.99 | 4.01 |

3.
$$\lim_{x \to \infty} \frac{3x+2}{x} = \boxed{3} = \frac{3x}{x} + \frac{2}{x} = \frac{3+0}{1}$$

7.
$$\lim_{Y \to 2} (X^2 - 5x) = \overline{-6}$$
 $|.9| |.99| |.01$
 $|.5,89| - 5.98| - 6.0099$

9:
$$\lim_{X \to -1} (2x^3 + 5x^2 - 2) = \prod_{\substack{-.9 \ 592}} |-.99| - 1.01$$

13.
$$\lim_{x \to \frac{1}{2}} \frac{x^2 - 1}{x - 1} = 2$$
 $\lim_{x \to \frac{1}{2}} \frac{1.99 \cdot 1.99}{1.99 \cdot 1.99} \cdot \frac{1.01}{2.01}$

$$13. \lim_{x \to \frac{1}{2}} \frac{4x^2 - 9}{2x + 3} = -6$$

$$-\frac{2.9}{2} \frac{2.99}{-5.99} \cdot \frac{3.01}{-5.01}$$

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Limits

19.
$$\lim_{X \to \infty} \frac{1}{2x} = \frac{1}{x} = \frac{1}{2} = \frac{0}{2} = \boxed{0}$$

21.
$$\lim_{x \to \infty} \frac{3x^2 - 5x + 2}{4x^2 + 8x - 11} = \frac{\frac{3x^2}{x^2} - \frac{5x}{x^2} + \frac{2}{x^2}}{\frac{4x^2}{x^2} + \frac{8x}{x^2} - \frac{11}{x^2}} = \frac{3 - 0 + 0}{4 + 0 - 0} = \boxed{\frac{3}{4}}$$