

$$\text{Ans1} = \left[\begin{array}{ccc}
 .1 = \left(\lim_{x \rightarrow 1} 5x^2 - 2x - 2 = 1 \right) & .2 = \left(\lim_{x \rightarrow 3} (x^2 - 3)(x^2 - 1) = 48 \right) & .3 = \left(\lim_{x \rightarrow 4} \frac{2x - 1}{2x + 1} = \frac{7}{9} \right) \\
 .4 = \left(\lim_{x \rightarrow 4} \frac{\sqrt{x - 2}}{x - 4} = \frac{1}{4} \right) & .5 = \left(\lim_{x \rightarrow 24} \frac{5 - \sqrt{x + 1}}{x - 24} = \frac{-1}{10} \right) & .6 = \left(\lim_{x \rightarrow 3} \sqrt{x - 3} = \text{undefined} \right) \\
 .7 = \left(\lim_{x \rightarrow (-1)} |x - 3| = 4 \right) & .8 = \left(\lim_{x \rightarrow 1} \frac{|x - 1|}{1 - x} = \text{undefined} \right) & .9 = \left(\lim_{x \rightarrow 4^+} \frac{x - 4}{|x^2 - x - 12|} = \frac{1}{7} \right) \\
 .10 = \left(\lim_{x \rightarrow 0^+} \frac{4}{|x|} - \frac{4}{x} = 0 \right) & .11 = \left(\lim_{x \rightarrow (4/3)} \frac{6x^2 + x - 12}{|3x - 4|} = \text{undefined} \right) & \text{Math@MUT}
 \end{array} \right]$$

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$$\text{Ans2} = \left[\begin{array}{c}
 .1 = [\lim_{x \rightarrow 0^-} f(x) = -4, \lim_{x \rightarrow 0^+} f(x) = 4, \lim_{x \rightarrow 0} f(x) = \text{undefined}] \\
 .2 = [\lim_{x \rightarrow 0^-} g(x) = -5, \lim_{x \rightarrow 0^+} g(x) = -5, \lim_{x \rightarrow 0} g(x) = -5] \\
 .3 = \left[\begin{array}{ccc}
 \lim_{x \rightarrow 0^+} f(x) + g(x) = -1 & \lim_{x \rightarrow 0^+} f(x) - g(x) = 9 & \lim_{x \rightarrow 0^-} f(x)g(x) = 20 \\
 \lim_{x \rightarrow 0^-} \frac{f(x)}{g(x)} = \frac{4}{5} & \lim_{x \rightarrow 0} f(x) - g(x) = \text{undefined} & \text{Math@MUT}
 \end{array} \right]
 \end{array} \right]$$

$$\text{Ans3} = \left[\begin{array}{ccc}
 .1 = \left(\lim_{x \rightarrow 2^-} f(x) = 1 \right) & .2 = \left(\lim_{x \rightarrow 2^+} f(x) = 2 \right) & .3 = \left(\lim_{x \rightarrow 2} f(x) = \text{undefined} \right) \\
 .4 = \left(\lim_{x \rightarrow (-5.7)^-} f(x) = -6. \right) & .5 = \left(\lim_{x \rightarrow (-5.7)^+} f(x) = -6. \right) & .6 = \left(\lim_{x \rightarrow (-5.7)} f(x) = -6. \right)
 \end{array} \right]$$

$$\text{Ans1} = \left[\begin{array}{l}
 .1 = \left(\lim_{x \rightarrow 1} 5x^2 - 3x + 1 = 3 \right) \quad .2 = \left(\lim_{x \rightarrow 3} (3x^2 + 3x - 1)(4x^2 - 3x) = 945 \right) \quad .3 = \left(\lim_{x \rightarrow 1} \frac{x+2}{2x^3 + 2x^2 + 3} = \frac{3}{7} \right) \\
 .4 = \left(\lim_{x \rightarrow 64} \frac{\sqrt{x} - 8}{64 - x} = \frac{-1}{16} \right) \quad .5 = \left(\lim_{x \rightarrow 13} \frac{4 - \sqrt{x+3}}{x - 13} = \frac{-1}{8} \right) \quad .6 = \left(\lim_{x \rightarrow 2} \sqrt{1-x} = \text{undefined} \right) \\
 .7 = \left(\lim_{x \rightarrow (-1)} |x - 2| = 3 \right) \quad .8 = \left(\lim_{x \rightarrow 1} \frac{1-x}{|x-1|} = \text{undefined} \right) \quad .9 = \left(\lim_{x \rightarrow 1^-} \frac{|x^2 - 3x + 2|}{x - 1} = -1 \right) \\
 .10 = \left(\lim_{x \rightarrow 0^+} \frac{4}{|x|} - \frac{4}{x} = 0 \right) \quad .11 = \left(\lim_{x \rightarrow (5/3)} \frac{|3x-5|}{6x^2 - 7x - 5} = \text{undefined} \right)
 \end{array} \right]$$

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$$\text{Ans2} = \left[\begin{array}{l}
 .1 = [\lim_{x \rightarrow 0^-} f(x) = 5, \lim_{x \rightarrow 0^+} f(x) = 5, \lim_{x \rightarrow 0} f(x) = 5] \\
 .2 = [\lim_{x \rightarrow 0^-} g(x) = -5, \lim_{x \rightarrow 0^+} g(x) = 5, \lim_{x \rightarrow 0} g(x) = \text{undefined}] \\
 .3 = \left[\begin{array}{l}
 \lim_{x \rightarrow 0^+} f(x) + g(x) = 10 \quad \lim_{x \rightarrow 0^+} f(x) - g(x) = 0 \quad \lim_{x \rightarrow 0^-} f(x)g(x) = -25 \\
 \lim_{x \rightarrow 0^-} \frac{f(x)}{g(x)} = -1 \quad \lim_{x \rightarrow 0} \frac{g(x)}{f(x)} = \text{undefined} \quad \text{Math@MUT}
 \end{array} \right]
 \end{array} \right]$$

$$\text{Ans3} = \left[\begin{array}{l}
 .1 = \left(\lim_{x \rightarrow 1^-} f(x) = 0 \right) \quad .2 = \left(\lim_{x \rightarrow 1^+} f(x) = 1 \right) \quad .3 = \left(\lim_{x \rightarrow 1} f(x) = \text{undefined} \right) \\
 .4 = \left(\lim_{x \rightarrow (-2.3)^-} f(x) = -3. \right) \quad .5 = \left(\lim_{x \rightarrow (-2.3)^+} f(x) = -3. \right) \quad .6 = \left(\lim_{x \rightarrow (-2.3)} f(x) = -3. \right)
 \end{array} \right]$$

$$Ans1 = \left[\begin{array}{ccc}
 .1 = \left(\lim_{x \rightarrow 3} 3x^3 - 4x^2 + x + 2 = 50 \right) & .2 = \left(\lim_{x \rightarrow 2} (5x + 2)(3x^2 + 3x - 3) = 180 \right) & .3 = \left(\lim_{x \rightarrow 2} \frac{x - 3}{4x - 1} = \frac{-1}{7} \right) \\
 .4 = \left(\lim_{x \rightarrow 4} \frac{2 - \sqrt{x}}{x - 4} = \frac{-1}{4} \right) & .5 = \left(\lim_{x \rightarrow 9} \frac{x - 9}{\sqrt{x - 5} - 2} = 4 \right) & .6 = \left(\lim_{x \rightarrow 3} \sqrt{1 - x} = \text{undefined} \right) \\
 .7 = \left(\lim_{x \rightarrow (-2)} |x - 3| = 5 \right) & .8 = \left(\lim_{x \rightarrow 1} \frac{|x - 1|}{x - 1} = \text{undefined} \right) & .9 = \left(\lim_{x \rightarrow 1^-} \frac{|x^2 + 4x - 5|}{x - 1} = -6 \right) \\
 .10 = \left(\lim_{x \rightarrow 0^+} \frac{4}{|x|} - \frac{4}{x} = 0 \right) & .11 = \left(\lim_{x \rightarrow (1/6)} \frac{18x^2 + 9x - 2}{|6x - 1|} = \text{undefined} \right) & \text{Math@MUT}
 \end{array} \right]$$

$$Ans2 = \left[\begin{array}{ccc}
 .1 = [\lim_{x \rightarrow 0^-} f(x) = -5, \lim_{x \rightarrow 0^+} f(x) = 5, \lim_{x \rightarrow 0} f(x) = \text{undefined}] \\
 .2 = [\lim_{x \rightarrow 0^-} g(x) = -4, \lim_{x \rightarrow 0^+} g(x) = -4, \lim_{x \rightarrow 0} g(x) = -4] \\
 .3 = \left[\begin{array}{ccc}
 \lim_{x \rightarrow 0^+} f(x) + g(x) = 1 & \lim_{x \rightarrow 0^-} f(x) - g(x) = -1 & \lim_{x \rightarrow 0^+} f(x) g(x) = -20 \\
 \lim_{x \rightarrow 0^-} \frac{f(x)}{g(x)} = \frac{5}{4} & \lim_{x \rightarrow 0} f(x) g(x) = \text{undefined} & \text{Math@MUT}
 \end{array} \right]
 \end{array} \right]$$

$$Ans3 = \left[\begin{array}{ccc}
 .1 = \left(\lim_{x \rightarrow 1^-} f(x) = 0 \right) & .2 = \left(\lim_{x \rightarrow 1^+} f(x) = 1 \right) & .3 = \left(\lim_{x \rightarrow 1} f(x) = \text{undefined} \right) \\
 .4 = \left(\lim_{x \rightarrow (-4.6)^-} f(x) = -5. \right) & .5 = \left(\lim_{x \rightarrow (-4.6)^+} f(x) = -5. \right) & .6 = \left(\lim_{x \rightarrow (-4.6)} f(x) = -5. \right)
 \end{array} \right]$$

$$\text{Ans1} = \left[\begin{array}{ccc}
 .1 = \left(\lim_{x \rightarrow 1} 3x^3 + 2x^2 + x - 1 = 5 \right) & .2 = \left(\lim_{x \rightarrow 2} (x + 1)(4x^3 - 3x^2 + 3x) = 78 \right) & .3 = \left(\lim_{x \rightarrow 3} \frac{4x + 2}{x - 1} = 7 \right) \\
 .4 = \left(\lim_{x \rightarrow 4} \frac{x - 4}{2 - \sqrt{x}} = -4 \right) & .5 = \left(\lim_{x \rightarrow 18} \frac{x - 18}{\sqrt{x - 2} - 4} = 8 \right) & .6 = \left(\lim_{x \rightarrow 3} \sqrt{x - 3} = \text{undefined} \right) \\
 .7 = \left(\lim_{x \rightarrow (-1)} |x - 2| = 3 \right) & .8 = \left(\lim_{x \rightarrow 3} \frac{|x - 3|}{3 - x} = \text{undefined} \right) & .9 = \left(\lim_{x \rightarrow 2^-} \frac{x - 2}{|x^2 - 3x + 2|} = -1 \right) \\
 .10 = \left(\lim_{x \rightarrow 0^+} \frac{1}{|x|} - \frac{1}{x} = 0 \right) & .11 = \left(\lim_{x \rightarrow (3/2)} \frac{2x^2 + x - 6}{|2x - 3|} = \text{undefined} \right) & \text{Math@MUT}
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$$\text{Ans2} = \left[\begin{array}{l}
 .1 = [\lim_{x \rightarrow 0^-} f(x) = 1, \lim_{x \rightarrow 0^+} f(x) = 1, \lim_{x \rightarrow 0} f(x) = 1] \\
 .2 = [\lim_{x \rightarrow 0^-} g(x) = -3, \lim_{x \rightarrow 0^+} g(x) = 3, \lim_{x \rightarrow 0} g(x) = \text{undefined}] \\
 .3 = \left[\begin{array}{ccc}
 \lim_{x \rightarrow 0^+} f(x) + g(x) = 4 & \lim_{x \rightarrow 0^-} f(x) - g(x) = 4 & \lim_{x \rightarrow 0^+} f(x) g(x) = 3 \\
 \lim_{x \rightarrow 0^-} \frac{f(x)}{g(x)} = \frac{-1}{3} & \lim_{x \rightarrow 0} \frac{g(x)}{f(x)} = \text{undefined} & \text{Math@MUT}
 \end{array} \right]
 \end{array} \right]$$

$$\text{Ans3} = \left[\begin{array}{ccc}
 .1 = \left(\lim_{x \rightarrow 2^-} f(x) = 2 \right) & .2 = \left(\lim_{x \rightarrow 2^+} f(x) = 3 \right) & .3 = \left(\lim_{x \rightarrow 2} f(x) = \text{undefined} \right) \\
 .4 = \left(\lim_{x \rightarrow (-2.7)^-} f(x) = -2. \right) & .5 = \left(\lim_{x \rightarrow (-2.7)^+} f(x) = -2. \right) & .6 = \left(\lim_{x \rightarrow (-2.7)} f(x) = -2. \right)
 \end{array} \right]$$

$$\text{Ans1} = \left[\begin{array}{lll}
 .1 = \left(\lim_{x \rightarrow 2} 2x^2 + 2x = 12 \right) & .2 = \left(\lim_{x \rightarrow 3} (4x - 3)(2x^3 - 2x^2 + x) = 351 \right) & .3 = \left(\lim_{x \rightarrow 1} \frac{2x^2 + 3x + 2}{x + 2} = \frac{7}{3} \right) \\
 .4 = \left(\lim_{x \rightarrow 64} \frac{64 - x}{\sqrt{x} - 8} = -16 \right) & .5 = \left(\lim_{x \rightarrow 3} \frac{2 - \sqrt{x + 1}}{3 - x} = \frac{1}{4} \right) & .6 = \left(\lim_{x \rightarrow 3} \sqrt{x - 3} = \text{undefined} \right) \\
 .7 = \left(\lim_{x \rightarrow 1} |x - 3| = 2 \right) & .8 = \left(\lim_{x \rightarrow 2} \frac{|x - 2|}{2 - x} = \text{undefined} \right) & .9 = \left(\lim_{x \rightarrow 3^-} \frac{|x^2 + 2x - 15|}{x - 3} = -8 \right) \\
 .10 = \left(\lim_{x \rightarrow 0^+} \frac{5}{|x|} - \frac{5}{x} = 0 \right) & .11 = \left(\lim_{x \rightarrow (4/3)} \frac{|3x - 4|}{3x^2 - 19x + 20} = \text{undefined} \right) &
 \end{array} \right],$$

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$$\text{Ans2} = \left[\begin{array}{l}
 .1 = \left[\lim_{x \rightarrow 0^-} f(x) = -1, \lim_{x \rightarrow 0^+} f(x) = -1, \lim_{x \rightarrow 0} f(x) = -1 \right] \\
 .2 = \left[\lim_{x \rightarrow 0^-} g(x) = -3, \lim_{x \rightarrow 0^+} g(x) = 3, \lim_{x \rightarrow 0} g(x) = \text{undefined} \right] \\
 .3 = \left[\begin{array}{lll}
 \lim_{x \rightarrow 0^-} f(x) + g(x) = -4 & \lim_{x \rightarrow 0^-} f(x) - g(x) = 2 & \lim_{x \rightarrow 0^+} f(x) g(x) = -3 \\
 \lim_{x \rightarrow 0^+} \frac{f(x)}{g(x)} = \frac{-1}{3} & \lim_{x \rightarrow 0} f(x) g(x) = \text{undefined} &
 \end{array} \right]
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$$\text{Ans3} = \left[\begin{array}{lll}
 .1 = \left(\lim_{x \rightarrow 2^-} f(x) = 2 \right) & .2 = \left(\lim_{x \rightarrow 2^+} f(x) = 3 \right) & .3 = \left(\lim_{x \rightarrow 2} f(x) = \text{undefined} \right) \\
 .4 = \left(\lim_{x \rightarrow (-3.1)^-} f(x) = -3. \right) & .5 = \left(\lim_{x \rightarrow (-3.1)^+} f(x) = -3. \right) & .6 = \left(\lim_{x \rightarrow (-3.1)} f(x) = -3. \right)
 \end{array} \right]$$

$$\text{Ans1} = \left[\begin{array}{ccc}
 \begin{array}{l}
 .1 = \left(\lim_{x \rightarrow 3} 2x^3 + 2x^2 + 3x + 2 = 83 \right) \\
 .4 = \left(\lim_{x \rightarrow 64} \frac{8 - \sqrt{x}}{64 - x} = \frac{1}{16} \right) \\
 .7 = \left(\lim_{x \rightarrow 2} |x - 3| = 1 \right) \\
 .10 = \left(\lim_{x \rightarrow 0^+} \frac{4}{|x|} - \frac{4}{x} = 0 \right)
 \end{array}
 &
 \begin{array}{l}
 .2 = \left(\lim_{x \rightarrow 2} (5x^2 + 2x - 3)(3x + 4) = 210 \right) \\
 .5 = \left(\lim_{x \rightarrow 4} \frac{3 - \sqrt{x + 5}}{x - 4} = \frac{-1}{6} \right) \\
 .8 = \left(\lim_{x \rightarrow 1} \frac{1 - x}{|x - 1|} = \text{undefined} \right) \\
 .11 = \left(\lim_{x \rightarrow (2/3)} \frac{|3x - 2|}{3x^2 - 14x + 8} = \text{undefined} \right)
 \end{array}
 &
 \begin{array}{l}
 .3 = \left(\lim_{x \rightarrow 4} \frac{3x - 3}{4x - 2} = \frac{9}{14} \right) \\
 .6 = \left(\lim_{x \rightarrow 2} \sqrt{x - 3} = \text{undefined} \right) \\
 .9 = \left(\lim_{x \rightarrow 4} \frac{x - 4}{|x^2 - x - 12|} = \frac{-1}{7} \right) \\
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$$\text{Ans2} = \left[\begin{array}{c}
 .1 = \left[\lim_{x \rightarrow 0^-} f(x) = -3, \lim_{x \rightarrow 0^+} f(x) = 3, \lim_{x \rightarrow 0} f(x) = \text{undefined} \right] \\
 .2 = \left[\lim_{x \rightarrow 0^-} g(x) = -4, \lim_{x \rightarrow 0^+} g(x) = -4, \lim_{x \rightarrow 0} g(x) = -4 \right] \\
 .3 = \left[\begin{array}{ccc}
 \lim_{x \rightarrow 0^+} f(x) + g(x) = -1 & \lim_{x \rightarrow 0^-} f(x) - g(x) = 1 & \lim_{x \rightarrow 0^-} f(x)g(x) = 12 \\
 \lim_{x \rightarrow 0^+} \frac{f(x)}{g(x)} = \frac{-3}{4} & \lim_{x \rightarrow 0} f(x) - g(x) = \text{undefined} & \text{Math@MUT}
 \end{array} \right]
 \end{array} \right]$$

$$\text{Ans3} = \left[\begin{array}{ccc}
 .1 = \left(\lim_{x \rightarrow 5^-} f(x) = 5 \right) & .2 = \left(\lim_{x \rightarrow 5^+} f(x) = 6 \right) & .3 = \left(\lim_{x \rightarrow 5} f(x) = \text{undefined} \right) \\
 .4 = \left(\lim_{x \rightarrow (-3.2)^-} f(x) = -3. \right) & .5 = \left(\lim_{x \rightarrow (-3.2)^+} f(x) = -3. \right) & .6 = \left(\lim_{x \rightarrow (-3.2)} f(x) = -3. \right)
 \end{array} \right]$$

$$\text{Ans1} = \left[\begin{array}{lll}
 .1 = \left(\lim_{x \rightarrow 2} 3x^3 - 4x^2 + 2x + 1 = 13 \right) & .2 = \left(\lim_{x \rightarrow 3} (3x^2 + x)(x^2 - 3) = 180 \right) & .3 = \left(\lim_{x \rightarrow 4} \frac{4x^3 - x - 2}{x - 1} = \frac{250}{3} \right) \\
 .4 = \left(\lim_{x \rightarrow 49} \frac{49 - x}{7 - \sqrt{x}} = 14 \right) & .5 = \left(\lim_{x \rightarrow 11} \frac{11 - x}{\sqrt{x - 2} - 3} = -6 \right) & .6 = \left(\lim_{x \rightarrow 2} \sqrt{x - 2} = \text{undefined} \right) \\
 .7 = \left(\lim_{x \rightarrow 2} |x + 3| = 5 \right) & .8 = \left(\lim_{x \rightarrow 2} \frac{|x - 2|}{x - 2} = \text{undefined} \right) & .9 = \left(\lim_{x \rightarrow 1-} \frac{|x^2 - 5x + 4|}{x - 1} = -3 \right) \\
 .10 = \left(\lim_{x \rightarrow 0-} \frac{4}{x} + \frac{4}{|x|} = 0 \right) & .11 = \left(\lim_{x \rightarrow (4/5)} \frac{5x^2 - 14x + 8}{|5x - 4|} = \text{undefined} \right) & \text{Math@MUT}
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$$\begin{array}{l}
 \text{Ans2} = \left[\begin{array}{l}
 .1 = [\lim_{x \rightarrow 0-} f(x) = -4, \lim_{x \rightarrow 0+} f(x) = -4, \lim_{x \rightarrow 0} f(x) = -4] \\
 .2 = [\lim_{x \rightarrow 0-} g(x) = -5, \lim_{x \rightarrow 0+} g(x) = 5, \lim_{x \rightarrow 0} g(x) = \text{undefined}] \\
 .3 = \left[\begin{array}{lll}
 \lim_{x \rightarrow 0-} f(x) + g(x) = -9 & \lim_{x \rightarrow 0+} f(x) - g(x) = -9 & \lim_{x \rightarrow 0} f(x)g(x) = -20 \\
 \lim_{x \rightarrow 0-} \frac{f(x)}{g(x)} = \frac{4}{5} & \lim_{x \rightarrow 0} f(x) - g(x) = \text{undefined} & \text{Math@MUT}
 \end{array} \right]
 \end{array} \right] \\
 \text{Ans3} = \left[\begin{array}{lll}
 .1 = \left(\lim_{x \rightarrow 3-} f(x) = 2 \right) & .2 = \left(\lim_{x \rightarrow 3+} f(x) = 3 \right) & .3 = \left(\lim_{x \rightarrow 3} f(x) = \text{undefined} \right) \\
 .4 = \left(\lim_{x \rightarrow (-4.1)-} f(x) = -5. \right) & .5 = \left(\lim_{x \rightarrow (-4.1)+} f(x) = -5. \right) & .6 = \left(\lim_{x \rightarrow (-4.1)} f(x) = -5. \right)
 \end{array} \right]
 \end{array}$$

$$\text{Ans1} = \left[\begin{array}{lll}
 .1 = \left(\lim_{x \rightarrow 2} 4x^3 + 4x^2 - 1 = 47 \right) & .2 = \left(\lim_{x \rightarrow 2} (2x - 1)(2x^3 + 3x^2 + 4) = 96 \right) & .3 = \left(\lim_{x \rightarrow 4} \frac{x - 2}{3x^2 - 2x - 2} = \frac{1}{19} \right) \\
 .4 = \left(\lim_{x \rightarrow 64} \frac{8 - \sqrt{x}}{x - 64} = \frac{-1}{16} \right) & .5 = \left(\lim_{x \rightarrow 1} \frac{x - 1}{2 - \sqrt{x + 3}} = -4 \right) & .6 = \left(\lim_{x \rightarrow 2} \sqrt{3 - x} = 1 \right) \\
 .7 = \left(\lim_{x \rightarrow (-3)} |x - 1| = 4 \right) & .8 = \left(\lim_{x \rightarrow 1} \frac{|x - 1|}{1 - x} = \text{undefined} \right) & .9 = \left(\lim_{x \rightarrow 2^-} \frac{x - 2}{|x^2 + 2x - 8|} = \frac{-1}{6} \right) \\
 .10 = \left(\lim_{x \rightarrow 0^-} \frac{3}{x} + \frac{3}{|x|} = 0 \right) & .11 = \left(\lim_{x \rightarrow (4/5)} \frac{|5x - 4|}{5x^2 + 11x - 12} = \text{undefined} \right) & \text{Math@MUT}
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 \end{array} \right]$$

$$\text{Ans2} = \left[\begin{array}{l}
 .1 = [\lim_{x \rightarrow 0^-} f(x) = -5, \lim_{x \rightarrow 0^+} f(x) = 5, \lim_{x \rightarrow 0} f(x) = \text{undefined}] \\
 .2 = [\lim_{x \rightarrow 0^-} g(x) = 5, \lim_{x \rightarrow 0^+} g(x) = 5, \lim_{x \rightarrow 0} g(x) = 5] \\
 .3 = \left[\begin{array}{lll}
 \lim_{x \rightarrow 0^+} f(x) + g(x) = 10 & \lim_{x \rightarrow 0^-} f(x) - g(x) = -10 & \lim_{x \rightarrow 0^-} f(x) g(x) = -25 \\
 \lim_{x \rightarrow 0^+} \frac{f(x)}{g(x)} = 1 & \lim_{x \rightarrow 0} f(x) g(x) = \text{undefined} & \text{Math@MUT}
 \end{array} \right]
 \end{array} \right]$$

$$\text{Ans3} = \left[\begin{array}{lll}
 .1 = \left(\lim_{x \rightarrow 2^-} f(x) = 2 \right) & .2 = \left(\lim_{x \rightarrow 2^+} f(x) = 3 \right) & .3 = \left(\lim_{x \rightarrow 2} f(x) = \text{undefined} \right) \\
 .4 = \left(\lim_{x \rightarrow (-2.2)^-} f(x) = -2. \right) & .5 = \left(\lim_{x \rightarrow (-2.2)^+} f(x) = -2. \right) & .6 = \left(\lim_{x \rightarrow (-2.2)} f(x) = -2. \right)
 \end{array} \right]$$

$$\left. \begin{array}{l}
 \text{Ans1} = \left[\begin{array}{l}
 .1 = (\lim_{x \rightarrow 1} x^2 + x - 1 = 1) \quad .2 = (\lim_{x \rightarrow 1} (5x^2 + 1)(x - 2) = -6) \quad .3 = \left(\lim_{x \rightarrow 4} \frac{4x - 1}{3x^3 - 2x^2 - 3} = \frac{15}{157} \right) \\
 .4 = \left(\lim_{x \rightarrow 9} \frac{9 - x}{3 - \sqrt{x}} = 6 \right) \quad .5 = \left(\lim_{x \rightarrow 11} \frac{4 - \sqrt{x + 5}}{x - 11} = \frac{-1}{8} \right) \quad .6 = (\lim_{x \rightarrow 2} \sqrt{x - 2} = \text{undefined}) \\
 .7 = (\lim_{x \rightarrow (-2)} |x + 3| = 1) \quad .8 = \left(\lim_{x \rightarrow 1} \frac{1 - x}{|x - 1|} = \text{undefined} \right) \quad .9 = \left(\lim_{x \rightarrow 3^+} \frac{|x^2 - 9|}{x - 3} = 6 \right) \\
 .10 = \left(\lim_{x \rightarrow 0^-} \frac{1}{x} + \frac{1}{|x|} = 0 \right) \quad .11 = \left(\lim_{x \rightarrow (5/4)} \frac{|4x - 5|}{4x^2 - 17x + 15} = \text{undefined} \right)
 \end{array} \right]
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$$\begin{array}{l}
 \text{Ans2} = \left[\begin{array}{l}
 .1 = [\lim_{x \rightarrow 0^-} f(x) = 2, \lim_{x \rightarrow 0^+} f(x) = 2, \lim_{x \rightarrow 0} f(x) = 2] \\
 .2 = [\lim_{x \rightarrow 0^-} g(x) = -1, \lim_{x \rightarrow 0^+} g(x) = 1, \lim_{x \rightarrow 0} g(x) = \text{undefined}] \\
 .3 = \left[\begin{array}{l}
 \lim_{x \rightarrow 0^+} f(x) + g(x) = 3 \quad \lim_{x \rightarrow 0^-} f(x) - g(x) = 3 \quad \lim_{x \rightarrow 0^-} f(x)g(x) = -2 \\
 \lim_{x \rightarrow 0^+} \frac{f(x)}{g(x)} = 2 \quad \lim_{x \rightarrow 0} \frac{g(x)}{f(x)} = \text{undefined} \quad \text{Math@MUT}
 \end{array} \right]
 \end{array} \right] \\
 \text{Ans3} = \left[\begin{array}{l}
 .1 = (\lim_{x \rightarrow 5^-} f(x) = 4) \quad .2 = (\lim_{x \rightarrow 5^+} f(x) = 5) \quad .3 = (\lim_{x \rightarrow 5} f(x) = \text{undefined}) \\
 .4 = (\lim_{x \rightarrow (-1.6)^-} f(x) = -2.) \quad .5 = (\lim_{x \rightarrow (-1.6)^+} f(x) = -2.) \quad .6 = (\lim_{x \rightarrow (-1.6)} f(x) = -2.)
 \end{array} \right]
 \end{array}$$

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$$\text{Ans1} = \left[\begin{array}{lll}
 .1 = \left(\lim_{x \rightarrow 3} 3x^3 + 3x^2 + 3x = 117 \right) & .2 = \left(\lim_{x \rightarrow 1} (5x - 4)(5x^2 + 3x + 1) = 9 \right) & .3 = \left(\lim_{x \rightarrow 2} \frac{2x^2 - x + 3}{x - 3} = -9 \right) \\
 .4 = \left(\lim_{x \rightarrow 16} \frac{4 - \sqrt{x}}{16 - x} = \frac{1}{8} \right) & .5 = \left(\lim_{x \rightarrow 29} \frac{\sqrt{x - 4} - 5}{29 - x} = \frac{-1}{10} \right) & .6 = \left(\lim_{x \rightarrow 2} \sqrt{3 - x} = 1 \right) \\
 .7 = \left(\lim_{x \rightarrow (-2)} |x + 3| = 1 \right) & .8 = \left(\lim_{x \rightarrow 2} \frac{x - 2}{|x - 2|} = \text{undefined} \right) & .9 = \left(\lim_{x \rightarrow 3^-} \frac{|x^2 + x - 12|}{x - 3} = -7 \right) \\
 .10 = \left(\lim_{x \rightarrow 0^-} \frac{1}{|x|} - \frac{1}{x} = \infty \right) & .11 = \left(\lim_{x \rightarrow (3/4)} \frac{12x^2 - 5x - 3}{|4x - 3|} = \text{undefined} \right) & \text{Math@MUT}
 \end{array} \right] \left[\begin{array}{l}
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 \end{array} \right]$$

$$\text{Ans2} = \left[\begin{array}{l}
 .1 = [\lim_{x \rightarrow 0^-} f(x) = 5, \lim_{x \rightarrow 0^+} f(x) = 5, \lim_{x \rightarrow 0} f(x) = 5] \\
 .2 = [\lim_{x \rightarrow 0^-} g(x) = -5, \lim_{x \rightarrow 0^+} g(x) = 5, \lim_{x \rightarrow 0} g(x) = \text{undefined}] \\
 .3 = \left[\begin{array}{lll}
 \lim_{x \rightarrow 0^+} f(x) + g(x) = 10 & \lim_{x \rightarrow 0^-} f(x) - g(x) = 10 & \lim_{x \rightarrow 0^-} f(x) g(x) = -25 \\
 \lim_{x \rightarrow 0^+} \frac{f(x)}{g(x)} = 1 & \lim_{x \rightarrow 0} f(x) g(x) = \text{undefined} & \text{Math@MUT}
 \end{array} \right]
 \end{array} \right]$$

$$\text{Ans3} = \left[\begin{array}{lll}
 .1 = \left(\lim_{x \rightarrow 1^-} f(x) = 1 \right) & .2 = \left(\lim_{x \rightarrow 1^+} f(x) = 2 \right) & .3 = \left(\lim_{x \rightarrow 1} f(x) = \text{undefined} \right) \\
 .4 = \left(\lim_{x \rightarrow (-5.8)^-} f(x) = -5. \right) & .5 = \left(\lim_{x \rightarrow (-5.8)^+} f(x) = -5. \right) & .6 = \left(\lim_{x \rightarrow (-5.8)} f(x) = -5. \right)
 \end{array} \right]$$

$$Ans1 = \left[\begin{array}{lll} .1 = \left(\lim_{x \rightarrow 3} 2x^3 - 4x^2 + 3x = 27 \right) & .2 = \left(\lim_{x \rightarrow 1} (3x^2 - 3x + 4)(4x^2 - x - 4) = -4 \right) & .3 = \left(\lim_{x \rightarrow 3} \frac{5x^2 + 4x + 2}{5x + 1} = \frac{59}{16} \right) \\ .4 = \left(\lim_{x \rightarrow 49} \frac{x - 49}{\sqrt{x} - 7} = 14 \right) & .5 = \left(\lim_{x \rightarrow (-2)} \frac{-2 - x}{1 - \sqrt{x + 3}} = 2 \right) & .6 = \left(\lim_{x \rightarrow 3} \sqrt{3 - x} = \text{undefined} \right) \\ .7 = \left(\lim_{x \rightarrow (-3)} |x - 2| = 5 \right) & .8 = \left(\lim_{x \rightarrow 1} \frac{|x - 1|}{1 - x} = \text{undefined} \right) & .9 = \left(\lim_{x \rightarrow 4^-} \frac{|x^2 - 7x + 12|}{x - 4} = -1 \right) \\ .10 = \left(\lim_{x \rightarrow 0^-} \frac{4}{x} - \frac{4}{|x|} = -\infty \right) & .11 = \left(\lim_{x \rightarrow (5/6)} \frac{|6x - 5|}{30x^2 - 49x + 20} = \text{undefined} \right) & \text{Math@MUT} \end{array} \right],$$

$$Ans2 = \left[\begin{array}{l} .1 = [\lim_{x \rightarrow 0^-} f(x) = -2, \lim_{x \rightarrow 0^+} f(x) = -2, \lim_{x \rightarrow 0} f(x) = -2] \\ .2 = [\lim_{x \rightarrow 0^-} g(x) = -3, \lim_{x \rightarrow 0^+} g(x) = 3, \lim_{x \rightarrow 0} g(x) = \text{undefined}] \\ .3 = \left[\begin{array}{lll} \lim_{x \rightarrow 0^-} f(x) + g(x) = -5 & \lim_{x \rightarrow 0^+} f(x) - g(x) = -5 & \lim_{x \rightarrow 0^+} f(x) g(x) = -6 \\ \lim_{x \rightarrow 0^-} \frac{f(x)}{g(x)} = \frac{2}{3} & \lim_{x \rightarrow 0} g(x) - f(x) = \text{undefined} & \text{Math@MUT} \end{array} \right] \end{array} \right]$$

$$Ans3 = \left[\begin{array}{lll} .1 = \left(\lim_{x \rightarrow 4^-} f(x) = 4 \right) & .2 = \left(\lim_{x \rightarrow 4^+} f(x) = 5 \right) & .3 = \left(\lim_{x \rightarrow 4} f(x) = \text{undefined} \right) \\ .4 = \left(\lim_{x \rightarrow (-2.5)^-} f(x) = -2. \right) & .5 = \left(\lim_{x \rightarrow (-2.5)^+} f(x) = -2. \right) & .6 = \left(\lim_{x \rightarrow (-2.5)} f(x) = -2. \right) \end{array} \right]$$

$$\text{Ans1} = \left[\begin{array}{lll} .1 = \left(\lim_{x \rightarrow 3} 5x^3 - 3x^2 + 2x - 2 = 112 \right) & .2 = \left(\lim_{x \rightarrow 1} (x-2)(3x^2 - 4x + 1) = 0 \right) & .3 = \left(\lim_{x \rightarrow 2} \frac{2x^2 + x - 3}{2x^2 - 2x - 4} = \text{undefined} \right) \\ .4 = \left(\lim_{x \rightarrow 9} \frac{3 - \sqrt{x}}{9 - x} = \frac{1}{6} \right) & .5 = \left(\lim_{x \rightarrow 5} \frac{\sqrt{x-4} - 1}{x-5} = \frac{1}{2} \right) & .6 = \left(\lim_{x \rightarrow 3} \sqrt{3-x} = \text{undefined} \right) \\ .7 = \left(\lim_{x \rightarrow 2} |x+2| = 4 \right) & .8 = \left(\lim_{x \rightarrow 1} \frac{|x-1|}{1-x} = \text{undefined} \right) & .9 = \left(\lim_{x \rightarrow 2^-} \frac{|x^2 - 4|}{x-2} = -4 \right) \\ .10 = \left(\lim_{x \rightarrow 0^-} \frac{1}{x} + \frac{1}{|x|} = 0 \right) & .11 = \left(\lim_{x \rightarrow (5/2)} \frac{2x^2 - 9x + 10}{|2x-5|} = \text{undefined} \right) & \text{Math@MUT} \end{array} \right] \left[\begin{array}{l} :(\ \\ :) \ M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \\ :) \end{array} \right]$$

$$\text{Ans2} = \left[\begin{array}{l} .1 = \left[\lim_{x \rightarrow 0^-} f(x) = 3, \lim_{x \rightarrow 0^+} f(x) = 3, \lim_{x \rightarrow 0} f(x) = 3 \right] \\ .2 = \left[\lim_{x \rightarrow 0^-} g(x) = -2, \lim_{x \rightarrow 0^+} g(x) = 2, \lim_{x \rightarrow 0} g(x) = \text{undefined} \right] \\ .3 = \left[\begin{array}{lll} \lim_{x \rightarrow 0^+} f(x) + g(x) = 5 & \lim_{x \rightarrow 0^+} f(x) - g(x) = 1 & \lim_{x \rightarrow 0^-} f(x) g(x) = -6 \\ \lim_{x \rightarrow 0^-} \frac{f(x)}{g(x)} = \frac{-3}{2} & \lim_{x \rightarrow 0} g(x) - f(x) = \text{undefined} & \text{Math@MUT} \end{array} \right] \end{array} \right]$$

$$\text{Ans3} = \left[\begin{array}{lll} .1 = \left(\lim_{x \rightarrow 4^-} f(x) = 3 \right) & .2 = \left(\lim_{x \rightarrow 4^+} f(x) = 4 \right) & .3 = \left(\lim_{x \rightarrow 4} f(x) = \text{undefined} \right) \\ .4 = \left(\lim_{x \rightarrow (-3.4)^-} f(x) = -4. \right) & .5 = \left(\lim_{x \rightarrow (-3.4)^+} f(x) = -4. \right) & .6 = \left(\lim_{x \rightarrow (-3.4)} f(x) = -4. \right) \end{array} \right]$$

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