

Limits & Continuity

1.2A – Limits by Substitution

Finding each limit by substitution. You may have to simplify first.

$$\#1) \lim_{x \rightarrow 9} \sqrt{x+7}$$

$$\#2) \lim_{x \rightarrow 2} (4x^2 - 7x + 1)$$

$$\#3) \lim_{x \rightarrow 15} \frac{2x^2 - 30x}{x - 15}$$

$$\#4) \lim_{x \rightarrow -5} \sqrt{77}$$

$$\#5) \lim_{x \rightarrow 81} [(x - 80)x^{1/2}]$$

$$\#6) \lim_{h \rightarrow 0} (3x^2h - 3xh + 33)$$

$$\#7) \lim_{h \rightarrow 5} \left[\frac{x^2 - 5}{x - 5} + h \right]$$

$$\#8) \lim_{x \rightarrow -5} \frac{x + 5}{x^2 + 7x + 10}$$

$$\#9) \lim_{x \rightarrow 0} \frac{6x^2 - 5x}{11x}$$

$$\#10) \lim_{h \rightarrow 0} \frac{3x^2h - 12xh^2 + 4h^3}{h}$$

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1.2A – Limits by Substitution

Finding each limit by substitution. You may have to simplify first.

$$\#11) \lim_{x \rightarrow 9} \sqrt{x}$$

$$\#12) \lim_{x \rightarrow 2} (9x^2 - 8x + 4)$$

$$\#13) \lim_{x \rightarrow 4} \frac{2x^2 - 15}{5x + 1}$$

$$\#14) \lim_{x \rightarrow 2} \sqrt{11}$$

$$\#15) \lim_{x \rightarrow 16} [(x + 4)x^{-1/2}]$$

$$\#16) \lim_{h \rightarrow 0} (9x^2h - 8xh + 4)$$

$$\#17) \lim_{x \rightarrow 5} \frac{x^2 - 25}{x - 5}$$

$$\#18) \lim_{x \rightarrow -2} \frac{x + 2}{x^2 + 7x + 10}$$

$$\#19) \lim_{x \rightarrow 0} \frac{x^3 + x^2 - x}{x^2 + x}$$

$$\#20) \lim_{h \rightarrow 0} \frac{8x^2h + 3xh^2 + h^3}{h}$$