Limits — By substitution

Name: _____ Date: _____

Find each limit. Check the bottom first: if it is not 0 there, substitute.

1. $\lim_{x \to 3} (x^2 + 2x + 1)$

   $= 3^2 + 2(3) + 1$

   $= 9 + 6 + 1$

   $= 16$

2. $\lim_{x \to -2} \frac{x + 2}{x + 3}$

3. $\lim_{x \to -3} (x^2 - x + 2)$

4. $\lim_{x \to -2} \frac{-x - 3}{x - 2}$

5. $\lim_{x \to -3} \frac{x}{x + 2}$

6. $\lim_{x \to 3} (x^2 + x)$

Limits · By substitution — Answer key

1. $\lim_{x \to 3} (x^2 + 2x + 1) = 16$

2. $\lim_{x \to -2} \frac{x + 2}{x + 3} = 0$

3. $\lim_{x \to -3} (x^2 - x + 2) = 14$

4. $\lim_{x \to -2} \frac{-x - 3}{x - 2} = \frac{1}{4}$

5. $\lim_{x \to -3} \frac{x}{x + 2} = 3$

6. $\lim_{x \to 3} (x^2 + x) = 12$