

## 2.3 Evaluating Limits Analytically

Name:

Date: May 18, 2015

**P 6.** Find  $\lim_{x \rightarrow -3} x^4$

**P 8.** Find  $\lim_{x \rightarrow -4} (2x + 3)$

**P 10.** Find  $\lim_{x \rightarrow 2} (-x^3 + 1)$

**P 12.** Find  $\lim_{x \rightarrow 1} (2x^3 - 6x + 5)$

**P 14.** Find  $\lim_{x \rightarrow 2} \sqrt[3]{12x + 3}$

**P 22.** Find  $\lim_{x \rightarrow 3} \frac{\sqrt{x + 6}}{x + 2}$

**P 24.** Find  $\lim_{x \rightarrow \pi} \tan x$

**P 26.** Find  $\lim_{x \rightarrow 2} \sin \frac{\pi x}{2}$

**P 32.** Find  $\lim_{x \rightarrow 7} \sec \frac{\pi x}{6}$

**P 34.** Find  $\lim_{x \rightarrow 0} e^{-x} \sin \pi x$

**P 42.** Let

$$\lim_{x \rightarrow c} f(x) = 3 \text{ and } \lim_{x \rightarrow c} g(x) = 2$$

Find

1.  $\lim_{x \rightarrow c} [5g(x)]$

2.  $\lim_{x \rightarrow c} [f(x) + g(x)]$

3.  $\lim_{x \rightarrow c} [f(x)g(x)]$

4.  $\lim_{x \rightarrow c} \frac{f(x)}{g(x)}$

**P 51.** Find the limit

$$\lim_{x \rightarrow 0} \frac{x}{x^2 - x}$$

**P 54.** Find the limit

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

**P 56.** Find the limit

$$\lim_{x \rightarrow 2} \frac{x^2 + 2x - 8}{x^2 - x - 2}$$

**P 58.** Find the limit

$$\lim_{x \rightarrow 3} \frac{\sqrt{x+1} - 2}{x - 3}$$

**P 62.** Find the limit

$$\lim_{x \rightarrow 0} \frac{\frac{1}{x+4} - \frac{1}{4}}{x}$$

**P 67.** Find the limit

$$\lim_{x \rightarrow 0} \frac{\sin x}{5x}$$

**P 68.** Find the limit

$$\lim_{x \rightarrow 0} \frac{3(1 - \cos x)}{x}$$

**P 74.** Find the limit

$$\lim_{\phi \rightarrow 0} \phi \sec \phi$$

**P 76.** Find the limit

$$\lim_{x \rightarrow \pi/4} \frac{1 - \tan x}{\sin x - \cos x}$$