

Calculus Practice: Finding Limits Using Other Methods 2b**Evaluate each limit.**

1) $\lim_{x \rightarrow \frac{5\pi}{6}} \csc(2x)$

2) $\lim_{x \rightarrow \frac{3\pi}{4}} 2\csc(2x)$

3) $\lim_{x \rightarrow \frac{\pi}{4}} 2\cot(x)$

4) $\lim_{x \rightarrow -\frac{\pi}{4}} 2\sec(x)$

5) $\lim_{x \rightarrow 0} -2\tan(x)$

6) $\lim_{x \rightarrow \frac{\pi}{4}} -2\sec(x)$

7) $\lim_{x \rightarrow \frac{\pi}{2}} -2\tan(2x)$

8) $\lim_{x \rightarrow \frac{2\pi}{3}} 2\cot(2x)$

9) $\lim_{x \rightarrow \frac{\pi}{6}} -\sec(x)$

10) $\lim_{x \rightarrow \frac{5\pi}{6}} \cot(x)$

$$11) \lim_{x \rightarrow 0} \frac{\cos\left(\frac{\pi}{2} - x\right)}{x}$$

$$12) \lim_{x \rightarrow 0} \frac{1 - \sin\left(\frac{\pi}{2} + x\right)}{x}$$

$$13) \lim_{x \rightarrow 0} \frac{\cos(5x) - \cos(2x)}{x}$$

$$14) \lim_{x \rightarrow 0} \frac{1 - \cos(3x)}{5x}$$

$$15) \lim_{x \rightarrow 0} \frac{1 - \cos(x)}{\cos(4x) - 1}$$

$$16) \lim_{x \rightarrow 0} \frac{5x}{\tan(4x)}$$

$$17) \lim_{x \rightarrow 0} \frac{\tan(3x)}{3x}$$

$$18) \lim_{x \rightarrow 0} \frac{\sin(3x)}{\sin(2x)}$$

$$19) \lim_{x \rightarrow 0} \frac{x^2}{1 - \cos(4x)}$$

$$20) \lim_{x \rightarrow 0} \frac{\sin(4x)}{5x}$$

Calculus Practice: Finding Limits Using Other Methods 2b

Evaluate each limit.

1) $\lim_{x \rightarrow \frac{5\pi}{6}} \csc(2x)$

$$-\frac{2\sqrt{3}}{3}$$

2) $\lim_{x \rightarrow \frac{3\pi}{4}} 2\csc(2x)$

$$-2$$

3) $\lim_{x \rightarrow \frac{\pi}{4}} 2\cot(x)$

$$2$$

4) $\lim_{x \rightarrow -\frac{\pi}{4}} 2\sec(x)$

$$2\sqrt{2}$$

5) $\lim_{x \rightarrow 0} -2\tan(x)$

$$0$$

6) $\lim_{x \rightarrow \frac{\pi}{4}} -2\sec(x)$

$$-2\sqrt{2}$$

7) $\lim_{x \rightarrow \frac{\pi}{2}} -2\tan(2x)$

$$0$$

8) $\lim_{x \rightarrow \frac{2\pi}{3}} 2\cot(2x)$

$$\frac{2\sqrt{3}}{3}$$

9) $\lim_{x \rightarrow \frac{\pi}{6}} -\sec(x)$

$$-\frac{2\sqrt{3}}{3}$$

10) $\lim_{x \rightarrow \frac{5\pi}{6}} \cot(x)$

$$-\sqrt{3}$$

$$11) \lim_{x \rightarrow 0} \frac{\cos\left(\frac{\pi}{2} - x\right)}{x}$$

1

$$12) \lim_{x \rightarrow 0} \frac{1 - \sin\left(\frac{\pi}{2} + x\right)}{x}$$

0

$$13) \lim_{x \rightarrow 0} \frac{\cos(5x) - \cos(2x)}{x}$$

0

$$14) \lim_{x \rightarrow 0} \frac{1 - \cos(3x)}{5x}$$

0

$$15) \lim_{x \rightarrow 0} \frac{1 - \cos(x)}{\cos(4x) - 1}$$

$-\frac{1}{16}$

$$16) \lim_{x \rightarrow 0} \frac{5x}{\tan(4x)}$$

$\frac{5}{4}$

$$17) \lim_{x \rightarrow 0} \frac{\tan(3x)}{3x}$$

1

$$18) \lim_{x \rightarrow 0} \frac{\sin(3x)}{\sin(2x)}$$

$\frac{3}{2}$

$$19) \lim_{x \rightarrow 0} \frac{x^2}{1 - \cos(4x)}$$

$\frac{1}{8}$

$$20) \lim_{x \rightarrow 0} \frac{\sin(4x)}{5x}$$

$\frac{4}{5}$