

Limits Drill

Evaluate the limit if it exists:

- (1) $\lim_{x \rightarrow 2} (3x^2 - 512)$
- (2) $\lim_{t \rightarrow 7^+} 5$
- (3) $\lim_{x \rightarrow \pi} \sec x$
- (4) $\lim_{u \rightarrow 2} \frac{5u^3 + 4u - 9}{2u - 1}$
- (5) $\lim_{x \rightarrow \pi/2^-} \frac{\cos x}{\sin x + \cos x}$
- (6) $\lim_{y \rightarrow 2} \frac{1}{y - 2}$
- (7) $\lim_{y \rightarrow -\infty} \frac{1}{y}$
- (8) $\lim_{x \rightarrow 1} e^{x^3 - x}$
- (9) $\lim_{h \rightarrow 0} \frac{(3 + h)^2 - 9}{h}$
- (10) $\lim_{x \rightarrow -4} \frac{\frac{1}{4} + \frac{1}{x}}{4 + x}$
- (11) $\lim_{t \rightarrow 0} \ln(\tan^2 t)$
- (12) $\lim_{x \rightarrow 1} \frac{x - 1}{x^2 - 1}$
- (13) $\lim_{l \rightarrow \pi^-} \cot l$
- (14) $\lim_{x \rightarrow \infty} \frac{5x^2 + 3x - 1}{7x^2 - \pi x - 134}$
- (15) $\lim_{s \rightarrow 0^-} e^{1/s}$
- (16) $\lim_{x \rightarrow \infty} (x^2 - x)$
- (17) $\lim_{t \rightarrow \infty} \frac{t^2 + t}{3 - t}$
- (18) $\lim_{x \rightarrow \pi/2^+} e^{\tan x}$
- (19) $\lim_{u \rightarrow \infty} \frac{4u^4 + 5}{(u^2 - 2)(2u^3 - 1)}$
- (20) $\lim_{x \rightarrow \infty} \cos x$
- (21) $\lim_{d \rightarrow \pi^-} \ln(\sin d)$
- (22) $\lim_{t \rightarrow \infty} \frac{\sin t}{t^2}$
- (23) $\lim_{x \rightarrow 1} \left(\frac{1}{x - 1} + \frac{1}{x^2 - 3x + 2} \right)$
- (24) $\lim_{y \rightarrow \infty} \sqrt{9y^2 + y} - 3y$
- (25) $\lim_{x \rightarrow -1} \frac{|x|}{x}$
- (26) $\lim_{h \rightarrow 0} \frac{(h + 1)^3 - 1}{h}$
- (27) $\lim_{x \rightarrow 1} \frac{\ln x}{x - 1}$
- (28) $\lim_{x \rightarrow 0} \frac{e^x - 1}{x^3}$
- (29) $\lim_{x \rightarrow 0} \frac{x + \tan x}{\sin x}$
- (30) $\lim_{x \rightarrow \infty} (xe^{1/x} - x)$
- (31) $\lim_{x \rightarrow \infty} (1 - 1/x)^{x^2}$
- (32) $\lim_{t \rightarrow 0^+} (\sin t \ln t)$
- (33) $\lim_{x \rightarrow \infty} x \tan \left(\frac{1}{x} \right)$
- (34) $\lim_{t \rightarrow 1} \frac{t^a - at + a - 1}{(t - 1)^2}$
- (35) $\lim_{h \rightarrow 0} \frac{\sin(x + h) - \sin x}{h}$
- (36) $\lim_{x \rightarrow 0} (1 - 2x)^{1/x}$