

Calculus I

Section 2.5A – Limits as $x \rightarrow a$

Determine the following limits.

$$1. \lim_{x \rightarrow 2} 6x$$

$$2. \lim_{x \rightarrow 3} x^2 + 4x - 5$$

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

$$4. \lim_{x \rightarrow 5} \sqrt{25-x^2}$$

$$5. \lim_{x \rightarrow 3} \frac{x-4}{x+1}$$

$$6. \lim_{x \rightarrow -2} \frac{x^2-4}{x^2+4}$$

$$7. \lim_{x \rightarrow 3} \frac{x^2-x-6}{x-3}$$

$$8. \lim_{x \rightarrow 0} \frac{2x^3}{x}$$

$$9. \lim_{x \rightarrow -1} \frac{x^2+3x+2}{x^2+4x+3}$$

$$10. \lim_{x \rightarrow -3} \frac{x+3}{x^2+4x+3}$$

$$11. \lim_{y \rightarrow 0} \frac{5y^3+8y^2}{3y^4-16y^2}$$

$$12. \lim_{x \rightarrow 0} \frac{5}{\sqrt{5x+4}+2}$$

Calculus I**Section 2.5A – Limits as $x \rightarrow a$**

13. $\lim_{x \rightarrow 0^+} \frac{4-x}{3+x^2}$

14. $\lim_{x \rightarrow \pi/3} \sin x \cos x$

15. $\lim_{x \rightarrow 0} \frac{\sin x - \cos x}{1 - x + 2\cos x}$

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

17. $\lim_{x \rightarrow 0^+} \frac{1}{3x}$

18. $\lim_{x \rightarrow 2^-} \frac{1}{x-2}$

19. $\lim_{x \rightarrow 2^+} \frac{1}{x-2}$

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

21. $\lim_{x \rightarrow 2^-} \frac{x}{x-2}$

22. $\lim_{x \rightarrow 3^+} \frac{x(x+1)}{x-3}$

23. $\lim_{x \rightarrow 3^-} \frac{x(x+1)}{x-3}$

24. $\lim_{x \rightarrow 3} \frac{x(x+1)}{x-3}$