Precalc 2002 Limits #2

Name_____Per:____

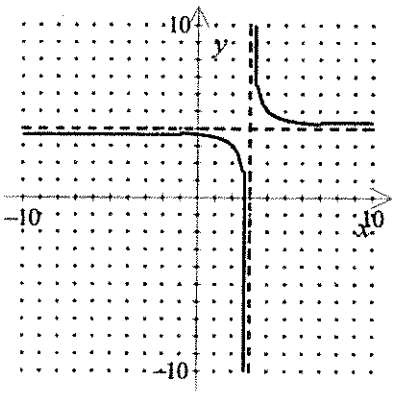
Find:

1. $\lim_{x\to 4} \dfrac{x-4}{x^2+2x-24}$

2. $\lim_{x\to 30} \dfrac{\sqrt{x+6}-6}{x-30}$

3. $\lim_{x\to 5} \dfrac{x-5}{x^2-9x+20}$

4. Find $\lim_{x\to 3^+} f(x)$.



Find:

5. $\lim_{x\to 20} \dfrac{\sqrt{x+5}-5}{x-20}$

6. $\lim_{x\to\infty} \left(\dfrac{2x}{x-4} + \dfrac{6x}{x^2+4} \right)$

7. $\lim_{x\to 4} \dfrac{x-4}{x^2-9x+20}$

8. $\lim_{x\to 2} \dfrac{x-2}{x^2-8x+12}$

9. $\lim_{x\to\infty} \left(\dfrac{3x}{x-5} + \dfrac{2x}{x+5} \right)$

10. Where is $f(x)=\sqrt{x-5}$ continuous? Express answer in interval notation.

11. Find: $\lim_{x\to\infty} \left(\dfrac{4x}{x-3} + \dfrac{4x}{x+3} \right)$

12. Where is $f(x)=\sqrt{3-x}$ continuous? Express answer in interval notation.

Find:

13. $\lim_{x\to\infty} \left(\dfrac{5x}{x-6} + \dfrac{5x}{x^2+6} \right)$

Find:

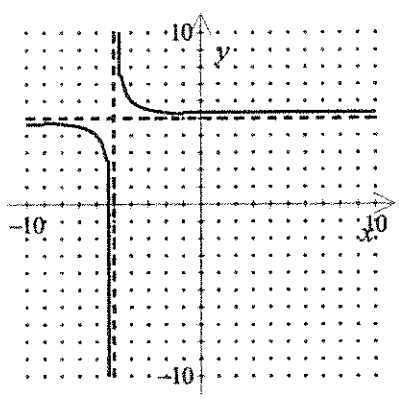
14. $\lim\limits_{x \to 156} \dfrac{\sqrt{x+13} - 13}{x - 156}$

15. $\lim\limits_{x \to 2} \dfrac{x-2}{x^2 + x - 6}$

16. $\lim\limits_{x \to 6} \dfrac{\sqrt{x+3} - 3}{x - 6}$

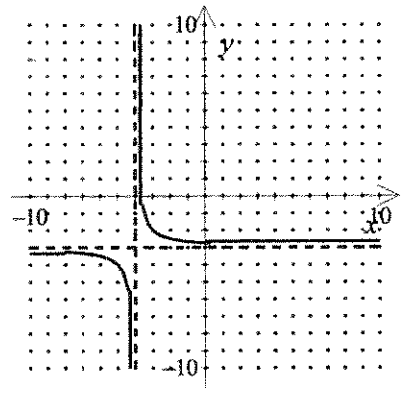
17. $\lim\limits_{x \to 2} \dfrac{\sqrt{x+2} - 2}{x - 2}$

18. Find $\lim\limits_{x \to -5^+} f(x)$.



19. Where is $f(x) = \sqrt{x-15}$ continuous? Express answer in interval notation.

20. Find $\lim\limits_{x \to -4^-} f(x)$.



21. Find: $\lim\limits_{x \to 3} \dfrac{x-3}{x^2 - 5x + 6}$

22. Where is $f(x) = \sqrt{x-8}$ continuous? Express answer in interval notation.

23. Find: $\lim\limits_{x \to 110} \dfrac{\sqrt{x+11} - 11}{x - 110}$

24. Find the constant a so that the function is continuous on the entire real line.

$$f(x) = \begin{cases} \dfrac{x^2 - a^2}{a - x}, & x \neq a \\ 10, & x = a \end{cases}$$