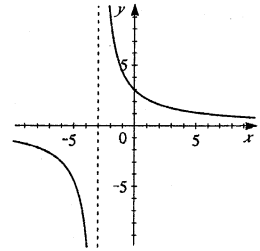
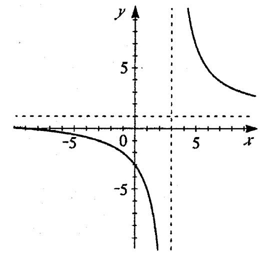
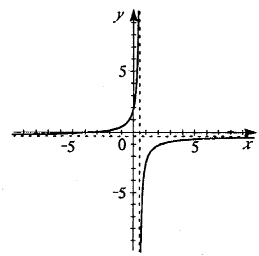
20. $r(x) = \dfrac{9}{x+3}$. When $x = 0$ we have $y = 3$, so the y-intercept is 3. Since the numerator can never equal zero, there is no x-intercept. The vertical asymptote is $x = -3$, and because the degree of the denominator is greater than the degree of the numerator, the horizontal asymptote is $y = 0$.



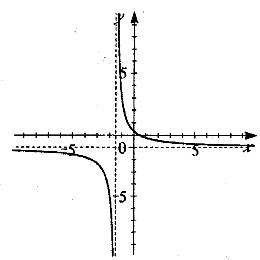
22. $r(x) = \dfrac{x+9}{x-3}$. When $x = 0$, $y = \dfrac{0+9}{0-3} = -3$, so the y-intercept is -3. When $y = 0$, $x + 9 = 0 \Leftrightarrow x = -9$, so the x-intercept is -9. Since $y = \dfrac{x+9}{x-3} = \dfrac{1+\frac{9}{x}}{1-\frac{3}{x}} \to 1$ as $x \to \pm\infty$, $y = 1$ is the horizontal asymptote. The vertical asymptote occurs when $x - 3 = 0$ $\Leftrightarrow$ $x = 3$, so $x = 3$ is the vertical asymptote.



24. $r(x) = \dfrac{2x+6}{-6x+3} = \dfrac{2(x+3)}{-3(2x-1)}$. When $x = 0$, we have $y = 2$, so the y-intercept is 2. When $y = 0$, we have $x + 3 = 0 \Leftrightarrow x = -3$, so the x-intercept is -3. A vertical asymptote occurs when $2x - 1 = 0 \Leftrightarrow x = \frac{1}{2}$. Because the degree of the denominator and the numerator are the same, the horizontal asymptote is $y = \frac{2}{-6} = -\frac{1}{3}$.



26. $s(x) = \dfrac{1-2x}{2x+3}$. When $x = 0$, $y = \frac{1}{3}$, so the graph passes through the origin. A vertical asymptote occurs when $2x + 3 = 0 \Leftrightarrow x = -\frac{3}{2}$, and because the degree of the denominator and the numerator are the same, the horizontal asymptote is $y = -1$.



28. $r(x) = \dfrac{x-2}{(x+1)^2}$. When $x = 0$, we have $y = -2$, so the y-intercept is -2. When $y = 0$, we have $x - 2 = 0 \Leftrightarrow x = 2.$, so the x-intercept is 2. A vertical asymptote occurs when $x = -1$, and because the degree of the denominator is greater than the degree of the numerator, the horizontal asymptote is $y = 0$.