MATEMATYKA ISP TYDZIEŃ 5-6

Zadanie 1. Rozwiązać nierówość:

(1) $\frac{x}{3} - \frac{1}{2} > \frac{x}{6}$
(2) $\frac{3}{x+3} > \frac{4}{x-8}$
(3) $2 > \frac{5}{x-4}$
(4) $|\frac{4x+3}{2x-1}| > 2$
(5) $\sqrt{(x-2)^2} < x+4$
(6) $\sqrt{\frac{3x-1}{2-x}} > 1$
(7) $x^2 + x + 1 < 0$
(8) $x^3 - 4x \geq 0$
(9) $\frac{x^2+x+2}{x^2-x-2} > 0$
(10) $\frac{13}{x-3} - \frac{3}{x+1} < -4$

Zadanie 2. Obliczyć granicę ciągu:

(1) $u_n = \frac{n}{n+1}$
(2) $u_n = \frac{2n^4-4n^2+5n-2}{4n-3n^3+n^4}$
(3) $u_n = \frac{3}{n} - \frac{2}{\sqrt{n}}$
(4) $u_n = \sqrt{n+1} - \sqrt{n}$
(5) $u_n = \sqrt{n^2+n+1} - n$
(6) $u_n = \frac{\sqrt{1+2n^2}-\sqrt{1+4n^2}}{n}$
(7) $u_n = n\sqrt[3]{2} - \sqrt[3]{2n^3+5n^2-7}$
(8) $u_n = \frac{1}{\sqrt{4n^2+7n}-2n}$
(9) $u_n = \frac{2^{n+1}-3^{n+2}}{3^{n+2}}$
(10) $u_n = \sqrt[n]{4^n + 5^n + 9^n + 2^{4n}}$
(11) $u_n = (1 + \frac{2}{n})^n$
(12) $u_n = (\frac{n^2+2}{2n^2+1})^{n^2}$
(13) $u_n = \frac{\sqrt{n}}{\sqrt{n+\sqrt{n+\sqrt{n}}}}$
(14) $u_n = \frac{\sin n}{n}$
(15) $u_n = \frac{n \sin(n!)}{n^2+1}$
(16) $u_n = n(\ln(n+1) - \ln n)$