Výsledky:

20) $X(p) = -\frac{p-3}{p(-6+p+p^2)}$, $x(t) = -\frac{1}{2} + \frac{2}{5}e^{-3t} + \frac{1}{10}e^{2t}$.

21) $X(p) = \frac{1}{p(4-4p+p^2)}$, $x(t) = \frac{1}{4} + \frac{1}{2}te^{2t} - \frac{1}{4}e^{2t}$.

22) $X(p) = \frac{p^2+2}{p^2(p^2+1)}$, $x(t) = 2t - \sin t$.

23) $X(p) = \frac{p^8-p^7+p^6+p^5+24}{p^9}$, $x(t) = \frac{1}{1680}t^8 + \frac{1}{6}t^3 + \frac{1}{2}t^2 - t + 1$.

24) $X(p) = 3\frac{1}{p^2(9+p^2)}$, $x(t) = \frac{1}{3}t - \frac{1}{9}\sin 3t$.

25) $X(p) = 3\left(81 + 18p^2 + p^4\right)^{-1}$, $x(t) = \frac{1}{18}\sin 3t - \frac{1}{6}t\cos 3t$.

26) $X(p) = \frac{4+p}{8+4p+p^2}$, $x(t) = e^{-2t}\cos 2t + e^{-2t}\sin 2t$.

27) $X(p) = -5\frac{p^2-1}{p^2(5-4p+p^2)}$, $x(t) = t + \frac{4}{5} - \frac{4}{5}e^{2t}\cos t - \frac{22}{5}e^{2t}\sin t$.

28) $X(p) = \frac{p^3-3p+3}{(p^2-3)p^2}$, $x(t) = -t + 1 + \frac{1}{\sqrt{3}}\sinh\sqrt{3}t$.

29) $X(p) = 4\left(2p - 1 - 2p^3 + p^4\right)^{-1}$, $x(t) = -\frac{1}{2}e^{-t} + t^2e^t - te^t + \frac{1}{2}e^t$.

30) $X(p) = -16\frac{p-1}{p(16-8p^2+p^4)}$, $x(t) = 1 - \frac{1}{2}te^{2t} - \frac{3}{2}te^{-2t} - e^{-2t}$.

31) $X(p) = \frac{2p^4-2p^3+3p^2-3p+2}{(p^3-p^2+p-1)p^2}$, $x(t) = e^t - 2t + 1 + \sin t$.

32) $X(p) = \frac{p-10}{30(p^2-6p+10)} + \frac{29p+4}{30(p^2+4)}$, $x(t) = \frac{1}{15}\sin 2t + \frac{29}{30}\cos 2t + e^{3t}\left(\frac{1}{30}\cos t - \frac{7}{30}\sin t\right)$.

33) $X(p) = \frac{p}{p^3+8} = \frac{p+2}{6(p^2-2p+4)} - \frac{1}{6(p+2)}$, $x(t) = e^t\left(\frac{1}{2\sqrt{3}}\sin\sqrt{3}t + \frac{1}{6}\sin\sqrt{3}t\right) - \frac{1}{6}e^{-2t}$.

34) $X(p) = \frac{p^3+2p^2+9p+18}{3p^4+48p^2} = \frac{7p+14}{48(p^2+16)} + \frac{3}{16p} + \frac{3}{8p^2}$, $x(t) = \frac{7}{96}\sin 4t + \frac{7}{48}\cos 4t + \frac{3t}{8} + \frac{3}{16}$.

35) $X(p) = \frac{p^2-16p+64}{p^3-23p^2+175p-441} = \frac{3}{4(p-7)} - \frac{1}{2(p-7)^2} + \frac{1}{4(p-9)}$, $x(t) = \frac{1}{4}e^{9t} - \frac{t}{2}e^{7t} + \frac{3}{4}e^{7t}$.

36) $X(p) = \left(p^2 - 1\right)^{-1}$, $x(t) = \sinh t$.

37) $X(p) = \frac{p^2+1}{p(p^2+4)}$, $x(t) = \frac{1}{4} + \frac{3}{4}\cos 2t$.

38) $X(p) = \frac{p}{p^2+2p+5}$, $x(t) = e^{-t}\cos 2t - \frac{1}{2}e^{-t}\sin 2t$.

39) $X(p) = 2\frac{p^3}{p^4-16}$, $x(t) = \frac{1}{2}e^{2t} + \frac{1}{2}e^{-2t} + \cos 2t$.

40) $x(t) = J_0(t)$.