

7. cvičení - výsledky

Příklad 1.

- (a) Maximum je v $\left[\frac{1}{3}, -\frac{2}{3}, \frac{2}{3}\right]$ a minimum v $\left[-\frac{1}{3}, \frac{2}{3}, -\frac{2}{3}\right]$.
- (b) Maximum je v $\left[\frac{2}{\sqrt{78}}, -\frac{7}{\sqrt{78}}, \frac{5}{\sqrt{78}}\right]$ a minimum v $\left[-\frac{2}{\sqrt{78}}, \frac{7}{\sqrt{78}}, -\frac{5}{\sqrt{78}}\right]$.
- (c) Maximum je v $\left[\frac{1}{\sqrt{3}}, \frac{1}{\sqrt{3}}, \frac{1}{\sqrt{3}}\right]$ a minimum v $\left[-\frac{1}{\sqrt{3}}, \frac{1}{\sqrt{3}}, \frac{1}{\sqrt{3}}\right], \left[\frac{1}{\sqrt{3}}, \pm\frac{1}{\sqrt{3}}, \mp\frac{1}{\sqrt{3}}\right]$.
- (d) Maximum v $\left[\frac{\pi}{6}, \frac{\pi}{6}, \frac{\pi}{6}\right]$ a minima se nenabývá.
- (e) Maximum v $\left[\frac{a}{6}, \frac{a}{6}, \frac{a}{6}\right]$ a minima se nenabývá.
- (f) Maximum je v $\left[\pm\sqrt{\frac{7}{3}\sqrt{\frac{5}{12}}}, \sqrt{\frac{5}{12}}\right]$ a minimum v $[0, 0]$.

Příklad 2.

- (a) Maximum je v $\left[\frac{1}{\sqrt{3}}, \pm\frac{1}{\sqrt{3}}, \pm\frac{1}{\sqrt{3}}\right], \left[-\frac{1}{\sqrt{3}}, \pm\frac{1}{\sqrt{3}}, \mp\frac{1}{\sqrt{3}}\right]$ a minimum v $\left[\frac{1}{\sqrt{3}}, \mp\frac{1}{\sqrt{3}}, \pm\frac{1}{\sqrt{3}}\right], \left[-\frac{1}{\sqrt{3}}, \pm\frac{1}{\sqrt{3}}, \pm\frac{1}{\sqrt{3}}\right]$.
- (b) Maximum je v $\left[\frac{2}{\sqrt{6}}, -\frac{1}{\sqrt{6}}, -\frac{1}{\sqrt{6}}\right], \left[-\frac{1}{\sqrt{6}}, \frac{2}{\sqrt{6}}, -\frac{1}{\sqrt{6}}\right], \left[-\frac{1}{\sqrt{6}}, -\frac{1}{\sqrt{6}}, \frac{2}{\sqrt{6}}\right]$ a minimum v $\left[-\frac{2}{\sqrt{6}}, \frac{1}{\sqrt{6}}, \frac{1}{\sqrt{6}}\right], \left[\frac{1}{\sqrt{6}}, -\frac{2}{\sqrt{6}}, \frac{1}{\sqrt{6}}\right], \left[\frac{1}{\sqrt{6}}, \frac{1}{\sqrt{6}}, -\frac{2}{\sqrt{6}}\right]$.
- (c) Maximum v $[1, 1]$ a minimum v $[0, 0]$.
- (d) Maximum v $\left[\pm\frac{\sqrt{3}}{2}, \frac{1}{2}\right]$ a minimum v $\left[\pm\frac{\sqrt{3}}{2}, -\frac{1}{2}\right]$.
- (e) Maximum je v $\left[\frac{1}{4}\sqrt{a}\sqrt[4]{15}, \frac{1}{4}\sqrt{a}\sqrt[4]{15^3}\right]$ a minimum v $\left[-\frac{1}{4}\sqrt{a}\sqrt[4]{15}, -\frac{1}{4}\sqrt{a}\sqrt[4]{15^3}\right]$.
- (f) Maximum je v $\left[\frac{1}{\sqrt{102}}, -\frac{1}{\sqrt{102}}, \frac{10}{\sqrt{102}}\right]$ a minimum v $\left[-\frac{1}{\sqrt{102}}, \frac{1}{\sqrt{102}}, -\frac{10}{\sqrt{102}}\right]$.
- (g) Maximum je v $\left[\frac{9}{5}, \frac{13}{5}\right]$ a minimum v $\left[\frac{1}{5}, \frac{7}{5}\right]$.
- (h) Maximum je v $\left[\frac{\sqrt{5}}{2}, 2\sqrt{5}\right]$ a minimum v $\left[-\frac{\sqrt{5}}{2}, -2\sqrt{5}\right]$.
- (i) Maximum v $\left[\frac{2\sqrt{2}}{\sqrt[4]{5}}, \frac{2}{\sqrt[4]{5}}\right]$ a minimum v $\left[\frac{2\sqrt{2}}{\sqrt[4]{5}}, -\frac{2}{\sqrt[4]{5}}\right]$.
- (j) Maximum v $[0, 1]$ a minimum v $[0, 0]$.
- (k) Maximum v $\left[\frac{1\pm\sqrt{5}}{4}, \frac{1}{2}, \frac{1\mp\sqrt{5}}{4}\right]$ a minimum v $\left[\frac{2}{3}, -\frac{1}{3}, \frac{2}{3}\right]$.
- (l) Maximum v $\left[-\frac{1}{2}, 0\right]$ a minimum v $[-2, 0]$.
- (m) Maximum v $\left[\pm\frac{1}{\sqrt{2}}, \pm\frac{1}{\sqrt{2}}, 0\right]$ a minimum v $\left[\frac{1}{\sqrt{2}}, \frac{1}{\sqrt{2}}, \pm 1\right], \left[-\frac{1}{\sqrt{2}}, \frac{1}{\sqrt{2}}, \pm 1\right]$.
- (n) Maximum v $\left[0, \pm\frac{1}{2}\right]$ a minimum v $[0, 0]$.
- (o) Maximum v $\left[\pm\frac{1}{2}, \pm\frac{1}{2}, \frac{1}{\sqrt{2}}\right]$ a minimum v $\left[\pm\frac{1}{2}, \mp\frac{1}{2}, -\frac{1}{\sqrt{2}}\right]$.
- (p) Maximum v $\left[\frac{\sqrt{5}-1}{2}, 0, \sqrt{\frac{\sqrt{5}-1}{2}}\right]$ a minimum v $\left[\frac{\sqrt{5}-1}{2}, 0, -\sqrt{\frac{\sqrt{5}-1}{2}}\right]$.
- (q) Maximum v $\left[\frac{1}{\sqrt{2}}, \frac{1}{\sqrt{2}}\right]$ a minimum v $[0, 0]$.