42a) $f_p(x) = px^2 + 6x + 1$ ⟵

$x_{top} = \frac{b}{-2a} = \frac{6}{-2p} = -\frac{3}{p}$

$y_{top} = f_p\left(-\frac{3}{p}\right) = p\cdot\left(-\frac{3}{p}\right)^2 + 6\left(-\frac{3}{p}\right) + 1$

$= p\cdot\frac{9}{p^2} + \frac{-18}{p} + 1$

$= \frac{9p}{p^2} + \frac{-18}{p} + 1$

$= \frac{9}{p} + \frac{-18}{p} + 1$

$= \frac{-9}{p} + 1$

$y = -2$

$\frac{-9}{p} + 1 = -2$

$\frac{-9}{p} = \frac{-3}{1}$

$-9 = -3p$

$3 = p$

44 $f_p(x) = -\frac{1}{8}x^2 + px - 6$

$x_{top} = -\frac{b}{2a} = -\frac{p}{2 \cdot -\frac{1}{8}} = -\frac{p}{-\frac{1}{4}} = 4p$

$\frac{-p}{-\frac{1}{4}} = \frac{p}{\frac{1}{4}} = p \div \frac{1}{4} = p \times \frac{4}{1} = 4p$

$y = \ldots x$

$4p = x \rightarrow p = \frac{x}{4}$

$y = -\frac{1}{8}x^2 + \frac{x}{4} \cdot x - 6$

$y = -\frac{1}{8}x^2 + \frac{x^2}{4} - 6$

$y = -\frac{1}{8}x^2 + \frac{1}{4}x^2 - 6$

$y = \frac{1}{8}x^2 - 6$

47 $f_p(x) = px^2 - px + 1$

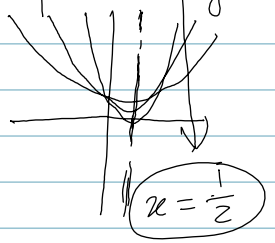
$x_{top} = \frac{-b}{2a} = \frac{p}{2p} = \frac{1}{2}$

Dus $x = \frac{1}{2}$

bij $p=1$ $f(x) = x^2 - x + 1$

bij $p=2$ $f(x) = 2x^2 - 2x + 1$

bij $p=3$ $f(x) = 3x^2 - 3x + 1$



48 $f_p(x) = -x^2 + px + 2p$

$x_{top} = \frac{-b}{2a} = \frac{p}{2 \cdot -1} = \frac{p}{-2} = \frac{1}{2}p$

$\frac{1}{2}p = x$

$x : \frac{1}{2} = x \times \frac{2}{1} = 2x$

$p = 2x$

$y = -x^2 + 2x \cdot x + 2 \cdot 2x$

$y = -x^2 + 2x^2 + 4x$

$y = x^2 + 4x$