ТС 1.3 11К

а) $\left(\frac{18}{16} - \frac{3}{16}\right) \cdot \frac{4}{3} = \frac{15}{16} \cdot \frac{4}{3} = \frac{5}{4}$

$\frac{1}{10}\left(\frac{15}{25} - \frac{1}{25}\right) = \frac{1}{10} \cdot \frac{14}{25} = \frac{7}{125}$

$\left(\frac{5}{4} - \frac{7}{125}\right) \cdot \frac{4}{7} = \frac{625-28}{500} \cdot \frac{4}{7} =$

$= \frac{597}{125 \cdot 7} = \frac{597}{875}$

$\frac{3}{2} - \frac{1}{3} = \frac{9-2}{6} = \frac{7}{6}$

$$\frac{\frac{597}{875}}{\frac{7}{6}} = \frac{597}{875} \cdot \frac{6}{7} = \boxed{\frac{3582}{6125}}$$

TC 1.3 11R

b) $u^3v^2 + u^2v^3 + 2u^2v^2 - u^2v^2 - uv^3$

$- 2uv^2 + 3uv^3 - 4u^3v^2 - 4u^2v^3 =$

$= \boxed{-3u^3v^2 - 3u^2v^3 + u^2v^2 + 2uv^3 - 2uv^2}$

c) $1 - 3 \cdot (1)^2 \cdot y^m + 3 \cdot (1) \cdot (y^m)^2 - (y^m)^3 =$

$\boxed{1 - 3y^m + 3y^{2m} - y^{3m}}$

d)

	x^3	$-3x^2$	2
x^3	x^6	$-3x^5$	$2x^3$
$-3x^2$	$-3x^5$	$9x^4$	$-6x^2$
2	$2x^3$	$-6x^2$	4

$\Rightarrow (x^3 - 3x^2 + 2)^2 = x^6 - 6x^5 + 9x^4 + 4x^3 - 12x^2 + 4$

TC 1.3 1MR

d) (Sunte)

	$3x^4$	$-5x^3$	$2x^2$	$-x$	-1
x^6	$3x^{10}$	$-5x^9$	$2x^8$	$-x^7$	$-x^6$
$-6x^5$	$-18x^9$	$30x^8$	$-12x^7$	$6x^6$	$6x^5$
$9x^4$	$27x^8$	$-45x^7$	$18x^6$	$-9x^5$	$-9x^4$
$4x^3$	$12x^7$	$-20x^6$	$8x^5$	$-4x^4$	$-4x^3$
$-12x^2$	$-36x^6$	$60x^5$	$-24x^4$	$12x^3$	$12x^2$
4	$12x^4$	$-20x^3$	$8x^2$	$-4x$	-4

$$3x^{10} - 23x^9 + 59x^8 - 46x^7 - 33x^6 + 65x^5 - 25x^4 - 12x^3 + 20x^2 - 4x - 4$$

e) $$x^{2n} + 2 + \frac{1}{x^{2n}} = x^{2n} + 2 \cdot 1 + \frac{1}{x^{2n}} =$$

$$x^{2n} + 2 \cdot x^n \cdot x^{-n} + x^{-2n} =$$

$$(x^n + x^{-n})^2 = \boxed{\left(x^n + \frac{1}{x^n}\right)^2}$$

f) $1+x^2+x^4 = x^4+2x^2+1-x^2 =$

$(x^2+1)^2 - x^2 = (x^2+1+x)(x^2+1-x) =$

$$\boxed{(x^2+x+1)(x^2-x+1)}$$

(Produit de polynômes irréductibles)

g) $\alpha^2+2\alpha-1 = (4x-2)^2+2(4x-2)-1 =$

$4x-2 \longrightarrow \alpha$

$16x^2-16x+4+8x-4-1 =$

$$\boxed{16x^2-1}$$