

$$31) \frac{a^2 - 36b^2}{6ab} : \left(\frac{1}{6b} - \frac{1}{a} \right) \text{ при } a = 5\frac{5}{17}, b = 5\frac{2}{17}$$

$$\frac{(a^2 - 36b^2) \cdot \cancel{(6ab)}}{(\cancel{6ab}) \cdot (a - 6b)} = \frac{\cancel{(a - 6b)} (a + 6b)}{(\cancel{a - 6b})} = \frac{a + 6b}{1} =$$

$$= \frac{90}{17} + 6 \cdot \frac{87}{17} = \frac{90 + 6 \cdot 87}{17} = \frac{612}{17} = 36$$

33) $\frac{7ab}{a+7b} \cdot \left(\frac{a}{7b} - \frac{7b}{a} \right)$ при $a = 7\sqrt{2} + 7$, $b = \sqrt{2} - 9$

$$\frac{\cancel{7ab} \cdot (\cancel{a} - 7b)(\cancel{a+7b})}{\cancel{a+7b} \cdot \cancel{7ab}} = \cancel{a} - 7b = \cancel{7\sqrt{2}} + 7 + 7\sqrt{2} - 63 = 70$$

$$35) \left(a + \frac{1}{a} + 2 \right) \cdot \frac{1}{a+1} \text{ при } a = -5$$

$$\frac{a^2 + 1 + 2a \cdot 1}{a \cdot a + 1} = \frac{(a+1)^2}{a \cdot a + 1} = \frac{-4}{-5} = 0,8$$

$$37) \frac{4a - a^2}{3 + a} : \frac{a^2}{3 + a} \text{ при } a = 0,8$$

$$\frac{(4 - a) \cdot 3 + a}{3 + a \cdot a^2} = \frac{3,2}{0,8} = 4$$

$$39) \frac{a^2 - 64b^2}{a^2} \cdot \frac{a}{a - 8b} \text{ при } a = \sqrt{448}, b = \sqrt{448}$$

$$\frac{(a - 8b)(a + 8b) \cdot a}{a^2 \cdot a - 8b} = \frac{9\sqrt{448}}{\sqrt{448}} = 9$$

45) $\frac{3ac^2}{a^2 - 16c^2} \cdot \frac{a - 4c}{ac}$ при $a = 2,1$; $c = -0,4$

$$\frac{\cancel{3} \cancel{a} c^2 \cdot \cancel{a - 4c}}{(\cancel{a - 4c})(a + 4c) \cdot \cancel{a}} = \frac{3c}{a + 4c} = \frac{-1,2}{0,5} = -2,4$$

47) $\frac{a}{a^2 - b^2} : \frac{a}{ab + b^2}$ при $a = 0,8$; $b = 0,3$

$$\frac{\cancel{a} b (\cancel{a + b})}{(\cancel{a + b})(a - b) \cdot \cancel{a}} = \frac{b}{a - b} = \frac{0,3}{0,5} = 0,6$$

51) $\left(\frac{a+2b}{a^2-2ab} - \frac{1}{a} \right) \cdot \frac{b}{2b-a}$ при $a=1,6$; $b=\sqrt{2}-1$

$$\frac{(a+2b) - \cancel{a+2b}}{(a^2-2ab) \cdot b} \cdot \frac{b}{2b-a} = \frac{\cancel{a+2b} (2b-a)}{a(a-2b) \cdot \cancel{b}} =$$

$$= \frac{-1}{a} = \frac{-1}{1,6} = -2,5$$

$$54) \frac{7a^{\cancel{17a}}}{6c} - \frac{49a^2 + 36c^2}{42ac} + \frac{6c - 49a^{\cancel{6c}}}{7a} \text{ при } a=71, c=87$$

$$\frac{\cancel{49a^2} - \cancel{49a^2} - \cancel{36c^2} + \cancel{36c^2} - 294ac}{42ac} = -7$$

$$56) (a^2 - 100) \left(\frac{1}{a+10} - \frac{1}{a-10} \right) \text{ при } a = -43$$

$$\cancel{(a+10)} \cancel{(a-10)} \left(\frac{\cancel{a-10} = \cancel{a-10}}{\cancel{(a+10)} \cancel{(a-10)}} \right) = -20$$

$$58) \frac{a^{-13} \cdot a^8}{a^{-6}} \text{ при } a=5$$

$$\frac{\frac{1}{4^8}}{\frac{1}{61^6}} = \frac{1}{0,8^2} = \frac{1}{25} = 0,04$$

$$60) \frac{(3x)^2 \cdot x^{-8}}{x^{-12} \cdot 4x^6} = \frac{9 \cdot x^2 \cdot x^{-8}}{x^{-12} \cdot 4 \cdot x^6} =$$

$$= \frac{9}{4} \cdot \frac{x^2 \cdot x^{-8}}{x^{-12} \cdot x^6} = \frac{9}{4} \cdot \frac{x^{-6}}{x^{-6}} = \frac{9}{4} =$$

$$= 2,25$$

$$\frac{a^{-8}}{a^{-6}} = a^{-8 - (-6)} =$$

$$= a^{-2} =$$

$$= \frac{1}{a^2} =$$

$$= \frac{1}{25}$$

62) $(a+2)^2 - a(4-7a)$ при $a = -0,5$

63) $(8b-8)(8b+8) - 8b(8b+8)$ при $b = 2,6$

64) $(7b+8)(8b+7) - 8b(7b+8)$ при $b = 5,6$

65) $a^{12} \cdot (a^{-4})^4$ при $a = -\frac{1}{2}$ $a^{-4} = \frac{1}{a^4} = \frac{1}{16}$

66) $a^{32} \cdot (a^{-5})^6$ при $a = 5$

67) $28ab + (2a-7b)^2$ при $a = \sqrt{15}$; $b = \sqrt{8}$

68) $(2x+3y)^2 - 3x\left(\frac{4}{3}x+4y\right)$ при $x = 2$; $y = \sqrt{3}$

69) Найдите $f(7)$, если $f(x+5) = 2^{4-x}$

$x=2 \Rightarrow f(2+5) = 2^{4-2}$
 $f(7) = 2^2 = 4$

70) Найдите $f(5)$, если $f(x+4) = 4^{4-x}$

71) Найдите $f(1)$, если $f(x-2) = 8^{5-x}$

72) Найдите $f(2)$, если $f(x-4) = 6^{8-x}$

63) $(8b - 8)(8b + 8) - 8b(8b + 8)$ при $b = 2,6$

$$\cancel{64b^2} - 64 - \cancel{64b^2} - 64b = -64(1 + b) = -230,4$$

$$\begin{array}{r} 64 \\ \cdot 3,6 \\ \hline 384 \\ + 192 \\ \hline 230,4 \end{array}$$

68) $(2x + 3y)^2 - 3x\left(\frac{4}{3}x + 4y\right)$ при $x = 2$; $y = \sqrt{3}$

$$\cancel{4x^2} + \cancel{12xy} + 9y^2 - \cancel{4x^2} - \cancel{12xy} = 9$$