Usuń niewymierność z mianownika

$$(1) \quad \frac{1}{\sqrt{2}}$$

(2)
$$\frac{1}{\sqrt{3}}$$

(3)
$$\frac{1}{\sqrt{7}}$$

(1)
$$\frac{1}{\sqrt{2}}$$
 (2) $\frac{1}{\sqrt{3}}$ (3) $\frac{1}{\sqrt{7}}$ (4) $\frac{1}{\sqrt{4}}$

$$(5) \quad \frac{\sqrt{2}}{\sqrt{3}}$$

$$(6) \quad \frac{\sqrt{2}+1}{\sqrt{5}}$$

(5)
$$\frac{\sqrt{2}}{\sqrt{3}}$$
 (6) $\frac{\sqrt{2}+1}{\sqrt{5}}$ (7) $\frac{\sqrt{2}+\sqrt{3}}{\sqrt{7}}$ (8) $\frac{\sqrt{7}-2}{\sqrt{2}}$

$$(8) \quad \frac{\sqrt{7}-2}{\sqrt{2}}$$

$$(9) \quad \frac{2 - \sqrt{11}}{\sqrt{3}}$$

$$(10) \quad \frac{3\sqrt{3}}{\sqrt{2}}$$

(9)
$$\frac{2-\sqrt{11}}{\sqrt{3}}$$
 (10) $\frac{3\sqrt{3}}{\sqrt{2}}$ (11) $\frac{3\sqrt{7}-2\sqrt{2}}{3\sqrt{2}}$ (12) $\frac{-\sqrt{7}-1}{-\sqrt{2}}$

(12)
$$\frac{-\sqrt{7}-1}{-\sqrt{2}}$$

(13)
$$\frac{1}{\sqrt{2}+1}$$

(14)
$$\frac{1}{\sqrt{2}-1}$$

$$(15) \quad \frac{\sqrt{2}}{\sqrt{5}-1}$$

(13)
$$\frac{1}{\sqrt{2}+1}$$
 (14) $\frac{1}{\sqrt{2}-1}$ (15) $\frac{\sqrt{2}}{\sqrt{5}-1}$ (16) $\frac{3\sqrt{2}}{\sqrt{7}+3}$

$$(17) \quad \frac{2\sqrt{3} - 4}{1 - \sqrt{2}}$$

$$(18) \quad \frac{\frac{1}{2} + \sqrt{2}}{\sqrt{2} - 2}$$

(19)
$$\frac{\sqrt{2} - \sqrt{3}}{\sqrt{5} - \sqrt{7}}$$

(17)
$$\frac{2\sqrt{3}-4}{1-\sqrt{2}}$$
 (18) $\frac{\frac{1}{2}+\sqrt{2}}{\sqrt{2}-2}$ (19) $\frac{\sqrt{2}-\sqrt{3}}{\sqrt{5}-\sqrt{7}}$ (20) $\frac{\sqrt{3}-3\sqrt{2}}{\sqrt{7}+2\sqrt{3}}$

Oblicz

$$(21) \quad \left(\frac{3+\sqrt{2}}{2}\right)^2$$

$$(22) \left(\frac{1+\sqrt{3}}{\sqrt{2}}\right)^2$$

(23)
$$3 \cdot \sqrt[3]{27} + 3$$

(24)
$$\frac{1}{8} \left(4 - \frac{\sqrt{2}}{3} \right)^2$$

(25)
$$-\left[\sqrt{2} - \sqrt{3} \cdot (\sqrt{6} - 1)\right]$$
 (26) $(\sqrt{2} + \sqrt{3})(\sqrt{2} - \sqrt{3})$

(26)
$$(\sqrt{2} + \sqrt{3})(\sqrt{2} - \sqrt{3})$$

$$(27) \ \left(3 \cdot 3^{\frac{1}{2}} + 3^{\frac{1}{3}}\right) \cdot \sqrt{3}$$

(28)
$$\sqrt[7]{3} \cdot 3^{\frac{1}{7}} \cdot \left(\sqrt{3} \cdot \sqrt{2} - \sqrt{6}\right)$$

$$(29) \ \ 3^7 \cdot 3^{-7} \cdot 3^3$$

$$(30) \ 2^5 \cdot 2^{-4} - 4^7 : 4^6$$

$$(31) \ \ 2^7 \cdot 4^{-3} + 3^{14} : \left(\frac{1}{3}\right)^{-15}$$

$$(32) \ 1 - \frac{1}{3^2} + 3 \cdot \sqrt{3} \cdot 3^{\frac{1}{2}}$$

$$(33) \ \frac{-2+16^{-\frac{1}{2}}}{\sqrt{2}}$$

$$(34) \quad \frac{3^{13}}{9^5} \cdot 9$$

$$(35) \ \frac{2 \cdot 2^7 : \left(\frac{1}{4}\right)^{-2}}{2^7}$$

$$(36) \quad \frac{\sqrt[3]{9} \cdot 3^{-2} \cdot \sqrt[4]{3}}{3}$$

Narysuj wykres funkcji

$$(37) \ y = x$$

(38)
$$y = 2x$$

(38)
$$y = 2x$$
 (39) $y = 3x$

(40)
$$y = \frac{1}{2}x$$
 (41) $y = \frac{1}{3}x$ (42) $y = x + 1$

(41)
$$y = \frac{1}{3}x$$

$$(42) \quad y = x + 1$$

$$(43) y = x + 2$$

(44)
$$u = x - 2$$

(43)
$$y = x + 2$$
 (44) $y = x - 2$ (45) $y = 2x - 1$

$$(46) \ \ y = 3x - 2$$

$$(47) f(x) = 2 - x$$

(46)
$$y = 3x - 2$$
 (47) $f(x) = 2 - x$ (48) $f(x) = \frac{1}{2}x - 2$

(49)
$$y = 2x - 4$$
 (50) $y = -x$ (51) $y = -2x$

(50)
$$y = -x$$

(51)
$$y = -2x$$

(52)
$$y = -3x - 2$$

(52)
$$y = -3x - 2$$
 (53) $y = -\frac{1}{2}x - 4$ (54) $y = 2$

$$(54) \quad y = 2$$

(55)
$$g(t) = 3t + 1$$

$$(56) \quad x \mapsto x - 2$$

(55)
$$g(t) = 3t + 1$$
 (56) $x \mapsto x - 2$ (57) $t \mapsto -2 - 2t$

$$(58)$$
 $f(x) = 0$

(59)
$$2y = 4x - 2$$

(58)
$$f(x) = 0$$
 (59) $2y = 4x - 2$ (60) $y = x \cdot \sqrt{2} - 1$

Rozwiąż równanie

$$(61) \quad -3x = 4 - 2 \cdot (3x + 2)$$

(61)
$$-3x = 4 - 2 \cdot (3x + 2)$$
 (62) $x^2 - 2x = 4 + (x + 1)^2$

$$(63) x - (1 - 2x) = 3$$

(64)
$$x - (2x+1)^2 = -x - 4x^2 + 3$$

(65)
$$4x + 1 = 3x - \sqrt{2}$$

(66)
$$1 - 3x = 3\sqrt{2} \cdot x - 3$$

(67)
$$2 - \frac{1}{2}(x+7) = frac3 - x2$$
 (68) $\frac{2-x}{3} + \frac{x-4}{2} = 1$

(68)
$$\frac{2-x}{3} + \frac{x-4}{2} = 1$$

(69)
$$(x+4)(x+3) = x^2 - 7$$

(70)
$$\frac{4x-2}{2} - \frac{3x-3}{3} = 4 - x$$

$$(71) \ \frac{2x+7}{3} = \frac{4x-1}{5}$$

$$(72) \quad \frac{7-3x}{2} - x + 4 = 3x - 1$$

$$(73) x(x-3) - x^2 = 0$$

$$(74) (x+4)(3-x) = -x^2 - (2x+1)$$