



Exercise 1: (1 point) Rationalize:

a) $\frac{6}{\sqrt{3}} =$

b) $\frac{14}{\sqrt[7]{2^3}} =$

c) $\frac{\sqrt{5} + \sqrt{3}}{\sqrt{5} - \sqrt{3}} =$

Exercise 2: (2.5 points) Work out, express as a single radical and simplify if possible:

a) $2\sqrt{243} - 3\sqrt{1875} + \sqrt{192} =$ (0.65)

b) $\frac{\sqrt[3]{2^{-7} \cdot 3^5}}{\sqrt[5]{2^3 \cdot 3^{-7}}} =$ (0.75)

c) $\sqrt[5]{x^{-4}} \cdot \sqrt{x^7} : \sqrt[3]{x^2} =$ (0.7)

d) $a^{-5/2} \cdot a^{3/4} : a^{-1/5} =$ (0.4)

Exercise 3: (0.75 points) The flying time from Malaga to Bath is of two hours and forty minutes. Find the percentage error if we round it to two and three quarters hours.

Exercise 4: (1 point) Solve and factorize the equation $x^6 + 12x^5 + 53x^4 + 102x^3 + 72x^2 = 0$

Exercise 5: (0.75 points) Study the following unions and intersections of intervals:

a) $[-2, 1) \cup [-1, +\infty) =$

b) $(-7, -1] \cap (-3, -2] =$

Exercise 6: (1 point) Work out:

a) $3.68 \cdot 10^{-5} - 4.5 \cdot 10^{-4} + 1.39 \cdot 10^{-3} =$

b) $(8.37 \cdot 10^{-3}) \cdot (5.79 \cdot 10^{-7}) =$

c) $(3.82 \cdot 10^{-2}) : (8.91 \cdot 10^{-5}) =$

Exercise 7: (3 points) Work out the value of the following expressions and simplify if possible:

a) $\frac{x}{x^2 - 4x + 4} - \frac{x-1}{x^2 - 4} + \frac{5}{2-x} =$ (1.25)

b) $\frac{10x^2 + 50x}{x^2 + 7x + 10} \cdot \frac{x^2 - 4}{5x^3 - 10x^2} =$ (1)

c) $\frac{x^2 + 10x + 25}{x^2 + 8x + 15} : \frac{x^2 - 25}{x^2 - 9} =$ (0.75)

