



Exercise 1: (1 point) Turn the following numbers into fractions:

$$a) 17.181920 = \frac{1718192}{100000}$$

$$b) \phi = \text{You can't}$$

$$c) 7.38\bar{5} = \frac{6647}{900}$$

$$d) 37.\overline{492} = \frac{37455}{999}$$

Exercise 2: (3 points) Work out, express as a single radical and simplify if possible:

$$a) \sqrt{75} - 3\sqrt{48} + 2\sqrt{243} = 11\sqrt{3} \quad (0.75)$$

$$b) \sqrt[3]{x^2} \cdot \sqrt[4]{x^{-7}} \cdot \sqrt[5]{x^{-1}} = x^{-53/60} = \sqrt[60]{\frac{1}{x^{53}}} \quad (0.75)$$

$$c) \frac{\sqrt[3]{3^2 \cdot 5^{-4}}}{\sqrt[4]{3^{-7} \cdot 5}} = \frac{3^2}{5} \sqrt[12]{\frac{3^5}{5^7}} \quad (1)$$

$$d) 2^{1/5} : 2^{3/2} = 2^{-13/10} = \frac{1}{2} \sqrt[10]{\frac{1}{2^3}} \quad (0.5)$$

Exercise 3: (1 point) Simplify:

$$a) \sqrt{7056} = 84$$

$$b) \sqrt[5]{\frac{a^{-15} b^{23} c^{41}}{w^{-54}}} = \frac{b^4 c^8 w^{10}}{a^3} \sqrt[5]{b^3 c w^4}$$

Exercise 4: (1 point) We've gone hiking this Sunday and we chose a route through the forest that takes one hour and a half to complete, but we walk really slowly and we needed one and three quarters of an hour to finish it. Find the percentage error between the theoretical and real times. $E_p = 16.67\%$

Exercise 5: (1 point) I plan to spend this long weekend correcting all the exams :(and I've realized that if I correct one third of the tests on Thursday and two sevenths of the remaining ones on Friday, I still have fifty tests to correct. How many students do I have this year? **105 students**

Exercise 6: (1.5 points) Study the following unions and intersections of intervals. Express them as inequalities too:

$$a) (-\infty, 5] \cup [-2, 1) = (-\infty, 5] \rightarrow x \leq 5$$

$$b) (-4, 2] \cap [2, 7) = \{2\} \rightarrow x = 2$$

$$c) (-5, 1] \cap (0, 2] = (0, 1] \rightarrow 0 < x \leq 1$$



Exercise 7: (1.5 points) Work out:

a) $8.37 \cdot 10^4 - 2.39 \cdot 10^6 + 1.17 \cdot 10^7 = 9.39 \cdot 10^6$

b) $4.72 \cdot 10^{-3} + 8.42 \cdot 10^{-2} - 3.8 \cdot 10^{-4} = 8.85 \cdot 10^{-2}$

c) $(5.71 \cdot 10^4) \cdot (3.74 \cdot 10^{-7}) = 2.14 \cdot 10^{-2}$

d) $(3.65 \cdot 10^{-5}) : (7.03 \cdot 10^{-9}) = 5.19 \cdot 10^3$

