Practice Exam 1

Part C contains problems which you have to solve correctly to pass the course with minimal grade C. There is no partial credit for these problems. Part AB contains problems for a grade higher than C.

This Practice Exam contains **more** problems than the actual exam will have. Make sure that you can handle **all** the problems in this practice exam, since on the exam you'll see the same types of problems. Also, practice solving problems in **timely** manner.

On the exam you have to show all your work, that is provide **complete** solution for the problems. Calculators are **not** allowed.

Part C

1. Calculate

a) $\dfrac{\dfrac{3}{2} + \dfrac{2}{3}}{2\left(1 - \dfrac{3}{7}\right)}$
b) $\dfrac{2 - \dfrac{3}{5}}{\dfrac{8/7}{7/4}}$
c) $3 - 2 \div (1 - 4) + 3 \cdot 2$

2. What is the value of the expression $\dfrac{x+1}{x^2+1}$ for $x = -2$?

3. Clear parentheses and combine similar terms in the expression $(2x - 1)(x - 3)$.

4. Use the difference of squares formula to factor the following expressions

a) $1 - x^2$ **b)** $4x^2 - 1$ **c)** $64 - x^2$ **c)** $25a^2 - 9b^2$

5. Factor the following perfect square trinomials

a) $x^2 + 2x + 1$ **b)** $x^2 - 4x + 4$ **c)** $4x^2 - 12x + 9$ **c)** $25x^2 + 10x + 1$

6. Simplify the following expressions

a) $\dfrac{x^2 - 4x + 4}{x^2 - 4}$ **b)** $\dfrac{x^2 - 4}{4x^2 - 8x}$ **c)** $\dfrac{x^2 - 100}{10 - x}$

7. Solve the equations and check your solution by substitution into the equation:

a) $5 - 3x = 1$ **b)** $1 - 2(3x - 1) = 2x$ **c)** $\dfrac{2x}{3} + 4 = 2\left(x - \dfrac{2}{3}\right)$

8. Solve the following equations

a) $2(x + 1) = 2x + 2$ **b)** $2(x + 1) = 2x - 2$ **c)** $\dfrac{\pi x}{2} + \sqrt{3} = x - \pi$

9. Solve the equation $|3x - 1| = \dfrac{4}{5}$ and check your solution by substitution.

10. Solve the inequality $2x + 3 \le -2(x - 3)$ and give the answer in an interval notation.