Math 100 Final Review Problems

These problems are intended to help you prepare for the test. **The Final Exam is cumulative**. These are problems that only cover Unit 3. Use the Exam 1 and Exam 2 reviews to study for previous sections.

This list of problems is not all inclusive and does not represent every possible type of problem. It is suggested that you review old practice exams, lectures, classwork problems, and homework problems in addition to this review.

Due on the day of the exam.

(1) Evaluate:

(a) $9^{-3/2}$

(b) $\dfrac{\sqrt{75x^3}}{\sqrt{3x}}$

(c) $16^{3/4}$

(d) $\dfrac{\sqrt{270a^{10}}}{\sqrt{5a}}$

(2) Evaluate:

(a) $16^{1/12} \cdot 16^{1/6}$

(b) $(36^{3/4})^2$

(c) $(9^{-3/2})^{-2}$

(d) $\left(\dfrac{4}{9}\right)^{-3/2}$

(3) Simplify:

(a) $\sqrt{x^1 2}$

(b) $\sqrt[3]{x^6}$

(c) $\sqrt[3]{16}$

(d) $\sqrt{18}$

(4) Simplify:

(a) $\sqrt[3]{32}\sqrt[3]{2}$

(b) $\sqrt[4]{\dfrac{48x^9y^{15}}{3xy^3}}$

(c) $\sqrt{75x^3y^7}$

(d) $\sqrt[3]{\dfrac{108x^3y^7}{2y^3}}$

(5) Solve:

(a) $\dfrac{1}{3x+3} + 2 = \dfrac{2}{x+1}$

(b) $5\sqrt{x^3} = 40$

(c) $\sqrt{10x-25} = x$

(d) $\dfrac{1}{x-4} + 3 = \dfrac{16}{x-4}$

(6) Evaluate:

(a) $\sqrt{36-5x} = x$

(b) $\dfrac{2}{x+5} + \dfrac{4}{x} = 1$

(c) $\sqrt[3]{4x-3} + 8 = 5$

(d) $\dfrac{x+5}{x-2} = \dfrac{x-1}{x+1}$

(7) Evaluate:

(a) $\dfrac{1}{x+1} + \dfrac{1}{x-2} = \dfrac{4}{x^2-4}$

(b) $\sqrt{36-5x} = x$

(c) $\sqrt[3]{2x-3} + 1 = 4$

(d) $\sqrt{x-2} = 5 - \sqrt{x+3}$

(8) Complete the operation then simplify:

(a) $(\sqrt{3}+2)^2$

(b) $\sqrt[3]{x} + 10\sqrt[3]{x} - 2\sqrt[3]{x}$

(c) $\sqrt{3} + \sqrt{27} - \sqrt{192}$

(d) $\sqrt[3]{16} - 5\sqrt[3]{54} + 3\sqrt[3]{64}$