

Name: _____

Date: _____

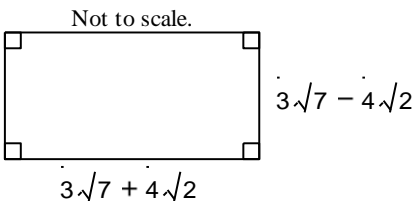
Pre-Calculus 11 – FINAL EXAM Review – Booklet 2

Chapters 5 and 6

***** Do this work on your own lined paper AND graph paper *****

Chapter 5 – Radicals

36. What does the expression $7\sqrt{7} - 6\sqrt{12} - (4\sqrt{28} + 4\sqrt{3})$ simplify to?
37. Express $\sqrt[5]{64n^{10}m^{15}}$ in simplified form.
38. The volume, V , in cubic units, of a cylinder is given by $V = \pi r^2 h$, where r is the radius and h is the height, both in the same units. Find the **exact radius** of a cylinder with a height of 64 cm and a volume of $576\pi \text{ cm}^3$. Express your answer in simplest form.
39. Express $-7\sqrt{6}(-6\sqrt{5} - 2\sqrt{6})$ in simplest form.
40. Find a simplified expression for the **area** of this shape.



41. Express $\frac{2\sqrt{21} - 3\sqrt{7}}{\sqrt{7}} + \frac{4\sqrt{3} - 8}{\sqrt{4}}$ in simplest form.
42. Solve $\sqrt{4x} - 5 = 6$
43. Solve $\sqrt{x+3} = \sqrt{2x+8}$.
44. What are the restrictions on x if the solution to the equation $-4 - \sqrt{4-x} = 6$ involves real numbers?

Chapter 6 – Rational Expressions and Equations

45. What are the non-permissible value(s) for the rational expressions $\frac{12}{x^2 - 4}$?
46. What is $\frac{5(4x^2 - y^2)}{2x^2 - 15xy - 8y^2}$ in simplest form? State any non-permissible values.
47. What is the simplified version of the rational expression $\frac{-3x + 12}{32 - 8x}$?
48. When fully simplified, ignoring non-permissible values, $\frac{6x^9}{3x^3} \times \frac{x^8}{9x^6}$ is equal to
49. When fully simplified, ignoring non-permissible values, $\frac{12x^{12}}{4x^3} \div \frac{x^8}{24x^6}$ is equal to
50. Simplify the rational expression $\frac{6a^4b^7}{(3ab)^2} \times \frac{(a^4b^7)^2}{(3ab^4)^3}$.
51. Simplify the rational expression $\frac{4x^8y^5}{(2xy)^3} \div \frac{(x^8y^5)^3}{(2xy^8)^4}$. Express your answer with positive exponents only.
52. Express the product $\frac{x^2 + 6x}{2x^2 + 15x + 27} \times \frac{x + 3}{x^2 - 36}$ in simplest form.
53. Express the quotient $\frac{x^2 - 5x - 24}{x^2 - 11x + 24} \div \frac{2x^2 + 7x + 3}{x^2 + x - 12}$ in simplest form.
54. Fully Simplify this expression: $\frac{6xy - 8}{x^2y^2} + \frac{-3 - 7xy}{7xy}$
55. Fully Simplify this expression: $\frac{x + 8}{x^2 + 9x + 20} + \frac{x + 5}{x^2 + 7x + 12}$
56. Solve the rational **equation**: $\frac{x}{x + 1} = \frac{4 - x}{x^2 - 3x - 4} + \frac{6}{x - 4}$.