

**Math 9      Review for Exam 2 – Rational expressions, radicals, rational exponents, geometry topics  
(04, 05, 06\_08)**

1	$\frac{25x^3 - 3x^5}{-5x^2} =$
2	$\frac{x^2 - 2x - 15}{x^2 - 3x - 10} =$
3	$\frac{4 - x^2}{x^2 + 2x - 8} =$
4	$\frac{50x}{x^2 - 3x - 10} \cdot \frac{x - 5}{10x} =$
5	$\frac{25 - 9x^2}{8x^2} \div \frac{3x - 5}{4x} =$
6	$\frac{x}{3} - \frac{7}{x + 2} =$
7	$\frac{7}{3x^2} + \frac{1}{4x} + \frac{5}{12x} =$
8	$\frac{x^2 - 2x + 4}{2x + 5} - \frac{4 + 2x - 5x^2}{(2x + 5)} =$
9	$\frac{x + 1}{x^2 - x} + \frac{5}{x^2} =$
10	$\frac{\frac{5}{ab}}{\frac{a}{b} + \frac{b}{a}} =$
11	$\frac{4 - \frac{3}{x^2}}{2 - \frac{1}{x}} =$
12	$\sqrt[3]{-27} =$
13	$\sqrt[6]{x^{12}y^{30}} =$
14	Simplify: $\sqrt[5]{x^{24}}$
15	Simplify: $\sqrt[4]{162} =$
16	Simplify: $\sqrt{50x^{25}y^3} =$
17	Simplify: $\sqrt[3]{128} =$
18	$5\sqrt[3]{5} + \sqrt[3]{40} =$
19	$\sqrt{320} - \sqrt{45} =$
20	$(5\sqrt{3})(2\sqrt{3}) =$
21	$\sqrt{5x^3y}\sqrt{5xy^5} =$
22	$(3 + 5\sqrt{3})(2 - 3\sqrt{3}) =$

23	$\frac{\sqrt{8x^5y}}{\sqrt{2xy}} =$
24	Rationalize the denominator: $\frac{6}{5\sqrt{3}} =$
25	Rationalize the denominator: $\frac{3+\sqrt{2}}{2+3\sqrt{2}} =$
26	$\left(\frac{16}{81}\right)^{-\frac{1}{4}} =$
27	$(-27)^{\frac{2}{3}} =$
28	$(8x^6y^{30})^{\frac{2}{3}} =$
29	$x^{1/5}x^{2/7}x^{3/5} =$
30	If one leg of a right triangle is 5, and the other is 12, what is the length of the hypotenuse?
31	Find the second leg of a right triangle with hypotenuse 7 and leg 3.
32	Determine if 7,24,25 are the lengths of the sides of a right triangle.
33	Find the area and perimeter of a rectangle with length 5 and width 3.
34	Find the area of a triangle whose height is 4 and base is 7.
35	Find the area and circumference of a circle with radius 4.

**Answers:**

1	$\frac{x(25-3x^2)}{-5}$	2	$\frac{x+3}{x+2}$	3	$\frac{-2-x}{x+4}$	4	$\frac{5}{x+2}$
5	$\frac{-5-3x}{2x}$	6	$\frac{x^2+2x-21}{3(x+2)}$	7	$\frac{7+2x}{3x^2}$	8	$\frac{(6x^2-4x)}{2x+5}$
9	$\frac{x^2+6x-5}{x^2(x-1)}$	10	$\frac{5}{a^2+b^2}$	11	$\frac{4x^2-3}{2x^2-x}$	12	-3
13	$x^2y^5$	14	$x^4\sqrt{x^4}$	15	$3\sqrt[4]{2}$	16	$5x^{12}y\sqrt{2xy}$
17	$4\sqrt[3]{2}$	18	$7\sqrt[3]{5}$	19	$5\sqrt{5}$	20	30
21	$5x^2y^3$	22	$-39+\sqrt{3}$	23	$2x^2$	24	$\frac{2\sqrt{3}}{5}$
25	$\frac{\sqrt{2}}{2}$	26	$\frac{3}{2}$	27	9	28	$4x^4y^{20}$
29	$\frac{38}{x^{35}}$	30	13	31	$\sqrt{40}$	32	yes
33	$A = 15, P = 16$	34	14	35	$C = 8\pi, A = 16\pi$		