

Math 80 Final Exam#4 Review

1) Add: $\frac{5}{x^2-9} + \frac{3}{x-3}$

2) Simplify: $\frac{x^3-27}{4x-12}$

3) Simplify the complex fraction: $\frac{\frac{x+3}{x-5}}{\frac{4x+12}{x+8}}$

4) Simplify: $(5+3i)(2-i)$

5) Simplify: $(3+2i)^2$

6) Simplify: $\frac{3i}{2+i}$

7) Simplify: $\sqrt{12} - 5\sqrt{27} + 2\sqrt{75}$

8) Simplify: $\sqrt[3]{24x^3y^5z^6}$

9) Rationalize: $\frac{2+\sqrt{7}}{2-\sqrt{7}}$

10) Find the quotient: $\frac{x^4+5x^3+x^2-10x}{x+2}$

11) Find the equation of the line that contains (2,3) and (-5,4)

12) State the slope and y-intercept of the line: $5x - 2y = 8$

13) Simplify: $27^{\frac{2}{3}}$

14) Find the inverse of: $y = 2x + 7$

15) State the domain of: $\frac{2x-1}{6-3x}$ (write in interval notation)

Solve each:

16) $\sqrt{2x-1} + 5 = 12$

17) $|3-5x|+1=9$

18) $2x^2 - 3x = 8$

19) $3^{3x+2} = 100$

20) $\log_3 x = -2$

Answers for Math 80 Final Exam Review

$$1) \frac{3x+14}{(x-3)(x+3)}$$

$$2) \frac{x^2+3x+9}{4}$$

$$3) \frac{x+8}{4(x-5)}$$

$$4) 13+i$$

$$5) 5+12i$$

$$6) \frac{3+6i}{5}$$

$$7) -3\sqrt{3}$$

$$8) 2xyz^2 \sqrt[3]{3y^2}$$

$$9) \frac{11+4\sqrt{7}}{-3}$$

$$10) x^3+3x^2-5x$$

$$11) y = -\frac{1}{7}x + \frac{23}{7}$$

$$12) \text{ slope} = 5/2 \quad \text{y-intercept} (0, -4)$$

$$13) 9$$

$$14) f^{-1}(x) = \frac{x-7}{2}$$

$$15) x \neq 2 \quad \text{or} \quad (-\infty, 2) \cup (2, \infty)$$

$$16) x = 25$$

$$17) x = -1, x = 11/5$$

$$18) x = \frac{3 \pm \sqrt{73}}{4}$$

$$19) 0.731$$

$$20) 1/9$$