

East Los Angeles College
Department of Mathematics
Math 125
Test 3 Study Guide

Show all work for credit.

Evaluate the following rational exponents.

1. $25^{\frac{1}{2}}$

2. $81^{\frac{1}{4}}$

3. $4^{\frac{3}{2}}$

4. $27^{\frac{2}{3}}$

5. $(-125)^{\frac{4}{3}}$

6. $81^{-\frac{1}{2}}$

Use properties of exponents to write as positive powers.

7. $x^{\frac{3}{4}} \cdot x^{\frac{5}{4}}$

8. $x^{-\frac{1}{2}} \cdot x^{\frac{1}{3}}$

9. $\frac{x^{2/3}}{x^{-1/2}}$

10. $(x^{-2/5})^{1/2}$

Solve the following quadratic in form equations for x and write your answers in **set notation**.

11. $\sqrt{x-3} = 4$

12. $\sqrt{x+2} = -5$

13. $2\sqrt{x+7} - 6 = 12$

14. $\sqrt{3x-8} = \sqrt{x+4}$

15. $\sqrt{x} = 4x$

16. $x^4 + 5x^2 + 6 = 0$

17. $2x^{-2} + x^{-1} - 15 = 0$

18. $x^{2/3} - 2x^{1/3} - 8 = 0$

19. $(3 + \sqrt{x})^2 + 3(3 + \sqrt{x}) - 10 = 0$

20. $x + \sqrt{x} - 12 = 0$

Solve for x by completing the square and write your answers in **Set Notation**.

21. $x^2 - 4x + 7 = 0$

22. $2x^2 + 8x + 5 = 0$

23. $x^2 + 2x + 5 = 0$

24. $3x^2 + 12x - 5 = 0$

Solve and graph the following inequalities.

25. $x^2 - 3x - 18 \geq 0$

26. $x^2 + 9x < 0$

27. $x^2 - 25 \leq 0$

28. $x(x-5)(x+4) \leq 0$

Answer Sheet

1		15	
2		16	
3		17	
4		18	
5		19	
6		20	
7		21	
8		22	
9		23	
10		24	
11		25	
12		26	
13		27	
14		28	