

East Los Angeles College
Department of Mathematics
Math 125
Test 3

Show all work for credit.

Evaluate the following rational exponents.

1. $36^{\frac{1}{2}}$

2. $16^{\frac{1}{4}}$

3. $9^{\frac{3}{2}}$

4. $8^{\frac{2}{3}}$

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

6. $49^{-\frac{1}{2}}$

Use properties of exponents to write as positive powers.

7. $x^{\frac{3}{4}} \cdot x^{\frac{1}{4}}$

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

9. $\frac{x^{\frac{4}{3}}}{x^{-\frac{1}{2}}}$

10. $(x^{-\frac{4}{5}})^{\frac{1}{2}}$

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

11. $\sqrt{x-3} = 5$

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

13. $2\sqrt{x+7} - 4 = 10$

14. $\sqrt{2x-8} = \sqrt{x+3}$

15. $\sqrt{x} = 5x$

16. $x^4 + 6x^2 + 8 = 0$

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

18. $x + \sqrt{x} - 30 = 0$

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

19. $x^2 - 6x + 5 = 0$

Solve and **graph** the following inequalities.

20. $x^2 - 3x - 10 \geq 0$

Answer Sheet

| | | | |
|----|--|----|--|
| 1 | | 11 | |
| 2 | | 12 | |
| 3 | | 13 | |
| 4 | | 14 | |
| 5 | | 15 | |
| 6 | | 16 | |
| 7 | | 17 | |
| 8 | | 18 | |
| 9 | | 19 | |
| 10 | | 20 | |