

SM2 Unit 3 Extra Practice

3.1-3.3- Simplify each expression containing fractional exponents. Describe the process you used.

1) $49^{3/2}$

2) $(8a^3)^{1/3}$

3) $(81k^{16})^{1/4}$

4) $3^{1/7}3^{1/4}$

5) $\frac{6y^{1/2}}{15y^{2/3}}$

6) $(x^{5/3})^{-2}$

7) $x^0 \cdot 4x^3 \cdot 3x^{-2/3}$

8) $(a^{2/3}b^{5/4})^{1/6}$

9) $(x^{1/2}y)(x^{-3/4}y^{1/2})$

10) $\left(\frac{a^3}{b^{1/2}}\right)^{3/4}$

3.4- Simplify the following radical expressions. Describe the similarities and differences between the left and right problems.

11) $\sqrt{4}$

12) $\sqrt{-4}$

13) $\sqrt{81}$

14) $\sqrt{-81}$

15) $\sqrt[3]{27}$

16) $\sqrt[3]{-27}$

Evaluate i raised to the indicated power. Describe your process.

17) i^{18}

18) i^{39}

19) $i^{1000001}$

20) i^{600}

Simplify each expression. Describe the process you used for each one.

21) $(-3 - 2i) + (4 - 6i)$

22) $6 - (10 + 3i)$

23) $(2 - 3i)(1 + 2i)$

24) $(19 + 5i) - (2 - 6i)$

25) $(8 + 3i)(2 - i)$

26) $(7 - 3i) + (-5i)$

Solve each equation by taking square roots.

27) $x^2 = -36$

28) $a^2 = -136$

29) $3x^2 - 1 = 26$

30) $(m + 1)^2 = -16$

31) $(y - 4)^2 = -3$

32) $-2n^2 = 80$