Algebra II- Mrs.Tilus
Unit 6 Review
"Don't waste this paper. ***Do the review!!***" ELKS

Name _____

1. Simplify each radical.

a) $\sqrt{80} = 4\sqrt{5}$

b) $\sqrt[3]{2^5 \cdot 3^3 a^4 b} = 6a\sqrt[3]{4ab}$

c) $\sqrt{3} \cdot \sqrt{15} = 3\sqrt{5}$

d) $(5\sqrt{2})^2 = 50$

e) $\frac{24}{\sqrt{3}} = 8\sqrt{3}$

f) $\frac{10\sqrt{6}}{\sqrt{24}} = 5$

h) $\sqrt[3]{6000} = 10\sqrt[3]{6}$

i) $\frac{10}{\sqrt[3]{25}} = 2\sqrt[3]{5}$

j) $\sqrt{\frac{40}{16}} = \frac{\sqrt{10}}{2}$

k) $\sqrt[3]{162c^7} = 3c^2\sqrt[3]{6c}$

2. Simplify

a) $\sqrt{75}+3\sqrt{12}$ $= 11\sqrt{3}$

b) $\sqrt{3}(\sqrt{27}+\sqrt{5})$ $= 9+\sqrt{15}$

3. Simplify

a) $(5+3\sqrt{3})(2-\sqrt{3})$ $= 1+\sqrt{3}$

b) $\dfrac{5}{3+\sqrt{5}}$ $= \dfrac{15-5\sqrt{5}}{4}$

4. Solve each equation.

a) $x+5=\sqrt{x+5}+6$

$x = 4$

b) $\sqrt[3]{x-2}+4=6$

$x = 10$

5. Identify each number as rational or irrational.

a) 0.75 R

b) $\sqrt{25}$ R

c) $0.\overline{16}$ R

d) $\sqrt{2}$ I

e) 3π I

6. Rewrite the following decimals as simplified fractions. **Show the process**.

a) $0.\overline{18} = \frac{2}{11}$

b) $0.32 = \frac{8}{25}$

7. Simplify each expression.

a) $3\sqrt{-48} = 12i\sqrt{3}$

b) $(3i)^2 = -9$

c) $\frac{35}{5\sqrt{-7}} = -i\sqrt{7}$

d) $\sqrt{-5}+\sqrt{-80} = 5i\sqrt{5}$

e) $\sqrt{-5}\cdot\sqrt{-80} = -20$

f) $\frac{16}{\sqrt{-8}} = -4i\sqrt{2}$

8. Simplify each complex expression. **Pay attention to what operation you are being asked to do!**

a) $(10 + 8i) + (6 - 5i) = 16 + 3i$

b) $(8 - 3i) - (5 - 3i) = 3$

c) $(3 + 4i)(2 - 7i) = 34 - 13i$

d) $\frac{9}{2+3i} = \frac{18}{13} - \frac{27i}{13}$