

## Algebra 3 Assignment # 6

Simplify the following:

$$(1) (-125)^{2/3}$$

$$(2) \left(\frac{16}{81}\right)^{3/4} + \left(\frac{256}{625}\right)^{1/4}$$

$$(3) \left(-\frac{125}{8}\right)^{1/3} - \left(\frac{1}{64}\right)^{1/3}$$

$$(4) \left(\frac{8}{27}\right)^{-2/3} + \left(-\frac{32}{243}\right)^{2/5}$$

$$(5) \frac{8}{\sqrt[3]{2}}$$

$$(6) (a^{-1/2}b^{1/3})(a^{1/2}b^{-1/3})$$

$$(7) \left(\frac{64a^6}{b^{-9}}\right)^{2/3}$$

$$(8) \left(\frac{a^{-2}b^3}{a^4b^{-3}}\right)^{-1/2} \left(\frac{a^4b^{-5}}{ab}\right)^{-1/3}$$

$$(9) \sqrt[3]{\frac{32}{x^2}} - \frac{2\sqrt[3]{x}}{\sqrt[3]{2x^3}}$$

$$(10) \sqrt[3]{\frac{x^{3n+1}y^n}{x^{3n+4}y^{4n}}}$$

**Answers:**

1. 25

2.  $\frac{148}{135}$

3.  $-\frac{11}{4}$

4.  $\frac{97}{36}$

5.  $4\sqrt[3]{4}$

6. 1

7.  $16a^4b^6$

8.  $\frac{a^2}{b}$

9.  $\frac{\sqrt[3]{4x}}{x}$

10.  $\frac{1}{y^n x}$