Name: _____   Date: _____

Learning Goal 4.4	Use exponent laws to simplify expressions with rational exponents.

1.
$$m^4n^{-2} \cdot m^2n^3$$
$$= m^4n$$

2.
$$\frac{6x^4y^{-3}}{14xy^2}$$
$$= \frac{3x^3}{7y^5}$$

3.
$$(25a^4b^2)^{3/2}$$
$$= 125a^6b^3$$

4.
$$(x^3y^{-3/2})(x^{-1}y^{1/2})$$
$$= \frac{x^2}{y}$$

5.
$$\frac{12x^{-5}y^{5/2}}{3x^{1/2}y^{-1/2}}$$
$$= \frac{4y^3}{x^{11/2}}$$

6.
$$\left(\frac{50x^2y^4}{2x^4y^7}\right)^{-1/2}$$
$$= \frac{xy^{3/2}}{5}$$

7.
$$\left(\frac{-5m^4n^{-5}}{15n^2p^6}\right)^{-4}$$
$$= \frac{81n^{28}p^{24}}{m^{16}}$$

8.
$$\left(\frac{-4m^3n^{-6}}{12n^3p^4}\right)^{-3}$$
$$= \frac{-27n^{27}p^{12}}{m^9}$$

9.
$$-\left(\frac{12a^4b^{-6}}{27a^{-2}c^6}\right)^{-1/2}$$
$$= \frac{-3b^3c^3}{2a^3}$$

10.
$$\left(\frac{-12a^6b^{-6}}{20a^{-3}c^4}\right)^{-4/3}$$
$$= \frac{-b^8c^{16/3}}{\sqrt[3]{6}a^{12}}$$