Zero and Negative Exponents

Section 8.2

Rules

- Any number (or variable) with an exponent of **zero** is equal to **1**

- **Negative Exponents**
  - If the negative exponent is on the top of a fraction, move it to the bottom and make it a positive exponent
  - If the negative exponent is on the bottom of a fraction, move it to the top and make it a positive exponent

Simplify the expressions

(answers should never have negative exponents)

1. 3^{-2}

2. $\frac{1}{5^{-4}}$

3. x^{-5}

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

More…

5. $\frac{1}{3x^{-5}}$

6. $6x^{-4}$

7. $-6x^{-5}$

8. $(xy^2)^{-3}$

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

Couple more…

10. $\left(\frac{-3x^{-2}}{4x^5y^2}\right)^{-1}$

11. $\left(\frac{2a^3b^2}{a^{-2}c^2}\right)^4$