

## Final Review Exponents

1. Make a list of some **perfect squares**. **No calculator**.

$1^2 =$	$4^2 =$	$7^2 =$	$10^2 =$	$13^2 =$
$2^2 =$	$5^2 =$	$8^2 =$	$11^2 =$	$14^2 =$
$3^2 =$	$6^2 =$	$9^2 =$	$12^2 =$	$15^2 =$

2. Make a list of some **perfect cubes**. **Do as many as you can without a calculator!**

$1^3 =$	$4^3 =$	$7^3 =$	$10^3 =$	$13^3 =$
$2^3 =$	$5^3 =$	$8^3 =$	$11^3 =$	$14^3 =$
$3^3 =$	$6^3 =$	$9^3 =$	$12^3 =$	$15^3 =$

3. Simplify and write as a single fraction.

$$4^0 + 5^0 + 2^{-1} + 3^{-2}$$

4.

**Simplify each of the following.**

1)  $a \cdot a^2 \cdot a^3$       2)  $(2a^2b)(4ab^2)$       3)  $(6x^2)(-3x^5)$       4)  $b^3 \cdot b^4 \cdot b^7 \cdot b$       5)  $(3x^3)(3x^4)(-3x^2)$

6)  $(2x^2y^3)^2$       7)  $(5x^2y^4)^3$       8)  $(6x^4y^6)^3$       9)  $(4x^3y^3)^3$       10)  $(7xy)^2$

11)  $\frac{x^3}{x}$       12)  $\frac{18c^3}{-3c^2}$       13)  $\frac{9a^3b^5}{-3ab^2}$       14)  $\frac{-48c^2d^4}{-8cd}$       15)  $\frac{22y^6z^8}{2yz^{-7}}$

16)  $x^2 \cdot x^7$       17)  $(x^2)^7$       18)  $(-2x^4)^5$       19)  $7^0$       20)  $8x^0$

21)  $\frac{2x^3}{-8x^4}$       22)  $\frac{xy^7}{x^3y^4}$       23)  $6x^5 \cdot 3x^5 \cdot x^0$       24)  $(3st^{12})^3$       25)  $\left(\frac{3m^2n^7}{m}\right)^5$