

## Homework – Arithmetic of exponents

Evaluate:

1.  $4^2 \cdot 3^2$

2.  $4^{-2}$

3.  $\left(\frac{1}{5}\right)^{-1}$

4.  $\left(\frac{2^{-2}}{2^{-3}}\right)^2$

Simplify using only positive exponents:

5.  $\frac{3^{n+2}}{3^n}$

6.  $(2x)^3 2^{-4}$

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

8.  $\frac{15x^7 y^2}{3x^6 y^3}$

9.  $(x^{-1} + y^{-1} + z^{-1})^{-1}$

10.  $\frac{36^{x+3}}{6^{x-1}}$

11. If  $2^x = 8$ , what is  $x$ ?

12. Mark true or false:

(a)  $x^n \cdot x^n = x^{2n}$

(b)  $y^3 \cdot y^3 = y^9$

(c) If  $x$  is a number between 0 and 1 then  $x^2$  is smaller than  $x$ .

(d) If  $x$  is greater than 1 then  $x^7 x^{-5}$  is greater than  $x$ .