BECA / Huson / 11.1 IB Math SL Name:
30 October 2017

Do Now: Exponents and radicals

Do these problems without a calculator. Use algebra properties to simplify each expression.

Exponent rules

1. $4a^{-2} \times \frac{1}{2}a^4b^3$

2. $\frac{5}{2}(xy^2)^2 \times \frac{1}{10}(x^3y)$

3. $a^3b \div a^{-4}$

4. $(-a^3)^3$

Fractional and negative exponents

5. $81^{\frac{1}{4}}$

6. $8^{\frac{2}{3}}$

7. $(0.01)^{-\frac{1}{2}}$

Radicals and exponents

Simplify, leaving no negative or fractional exponents.

8. $\sqrt{y^2}$

9. $\frac{x\sqrt{25x}}{x^2}$

10. $\sqrt[4]{\frac{xy^{12}}{z^4}}$

11. Let $f(x) = 2^x$, for $-4 \leq x \leq 4$.

(a) On the grid below, graph f.

(b) Write down the value of $f(0)$.

(c) Using the graph, solve for $f(x) = \frac{1}{4}$.

(d) What is the value of $f^{-1}(4)$?