
Solutions to Quiz 1 - MAT 1275 - Spring 2017

1. [1 point each] Simplify and write your answer without using negative exponents.

(a) $\frac{b^8}{b^{10}}$ (b) $\frac{b^{-8}}{b^{10}}$ (c) $\frac{b^8}{b^{-10}}$ (d) $\frac{b^{-8}}{b^{-10}}$

Solution: (a) $\frac{b^8}{b^{10}} = b^{8-10} = b^{-2} = \frac{1}{b^2}$

(b) $\frac{b^{-8}}{b^{10}} = b^{-8-10} = b^{-18} = \frac{1}{b^{18}}$

(c) $\frac{b^8}{b^{-10}} = b^{8-(-10)} = b^{18}$

(d) $\frac{b^{-8}}{b^{-10}} = b^{-8-(-10)} = b^2$

2. [3 points] Simplify and write your answer without using negative exponents:
$$\frac{6a^{10}b^3}{12a^5b^6}$$

Solution: $\frac{6a^{10}b^3}{12a^5b^6} = \frac{a^{10-5}b^{3-6}}{2} = \frac{a^5b^{-3}}{2} = \frac{a^5}{2b^3}$

3. [3 points] Simplify:
$$\frac{3x}{x^2 - 49} - \frac{7 + 2x}{x^2 - 49}.$$

Solution:

$$\frac{3x}{x^2 - 49} - \frac{7 + 2x}{x^2 - 49} = \frac{3x - (7 + 2x)}{x^2 - 49} = \frac{3x - 7 - 2x}{x^2 - 49} = \frac{x - 7}{(x - 7)(x + 7)} = \frac{1}{x + 7}$$