Operations with Exponents

1. $(x^6 y^8 z^5)(x^6 y^2 z)$

$x^6 \cdot x^6 \quad y^8 \cdot y^2 \quad z^5 \cdot z$ ← 1 here

$x^{12} y^{10} z^6$

2. $(14 f g^2 h^2)(3 f^4 g^2 h^2)$

$42 f^5 g^4 h^4$

3. $(10 x y^5 z^3)(3 x^4 y^6 z^3)$

$= 30 x^5 y^{11} z^6$

4. $(j^5k^4)^7 = j^{35}k^{28}$

$(j^5k^4)(j^5k^4)(j^5k^4)(j^5k^4)(j^5k^4)(j^5k^4)(j^5k^4)$

5. $(3p^6r^2)^3 = 3^3p^{18}r^6 \rightarrow 27p^{18}r^6$

6. $\left(\frac{4}{5}a^2\right)^5 = \frac{4^5}{5^5}a^{10} = \frac{1024}{3125}a^{10} \rightarrow \frac{1024a^{10}}{3125}$

$\frac{4}{5}\cdot\frac{4}{5}\cdot\frac{4}{5}\cdot\frac{4}{5}\cdot\frac{4}{5}$ $a^2\cdot a^2\cdot a^2\cdot a^2\cdot a^2$

7. $[(2^2)^2]^2 \rightarrow [2^4]^2 \rightarrow 2^8$

8. $(2b^3c^4)^3 \rightarrow 2^3b^9c^{12} \rightarrow 8b^9c^{12}$

9. $(5a^2b^3c^4)^4(6a^3b^4c^2)$

$(5^4a^8b^{12}c^{16})(6a^3b^4c^2)$

$(625a^8b^{12}c^{16})(6a^3b^4c^2) =$