

Key

Exponents Day 2 Homework

Simplify the following. DO NOT USE A CALCULATOR

1. $(-3x)(-3x)$
 $(-3x)^2$
 $9x^2$

2. $(p^4q^2)^7$
 $(p^4q^2)(p^4q^2)(p^4q^2) \dots$
 $p^{28}q^{14}$

3. $(x^4y^3)^2(x^3y^0)^2$
 $x^8y^6 \cdot x^6$
 $x^{14}y^6$

4. $(ac^2)^{-2}(ac)^4$
 $a^{-2}c^{-4}a^4c^4$
 $\frac{a^4c^4}{a^2c^4} = a^2$

5. $(3m^7)(m^2n)(5m^3n^8)$
 $15m^{12}n^9$

6. $-5^2z^2z^3$
 $-25z^5$

7. $(5x^2)^2(5x^2)$
 $25x^4 \cdot 5x^2$
 $125x^6$

8. $-(4x^3)^4$
 $-(4^4x^{12})$
 $-256x^{12}$

9. $xy(x^2)^3(y^3)^4$
 xyx^6y^{12}
 x^7y^{13}

10. $(a^{-3})^4(-2a^7)^2$
 $a^{-12}(-2)^2a^{14}$
 $4a^2$

11. $\frac{(h^8k^3)^7}{hk}$
 $\frac{h^{56}k^{21}}{hk}$
 $h^{55}k^{20}$

12. $\frac{(p^{10}q^6)^3}{p^{10}q^{20}}$
 $\frac{p^{30}q^{18}}{p^{10}q^{20}}$
 $\frac{p^{20}}{q^2}$

Explain the error in each of the following:

13. $x^2 \cdot x^4 = x^8$
 You should add the exponents instead of multiplying
 $x \cdot x \cdot x \cdot x \cdot x \cdot x = x^6$

14. $\frac{x^{10}}{x^5} = x^2$
 You should subtract the exponents not divide them
 ~~$x \cdot x \cdot x \cdot x \cdot x \cdot x \cdot x \cdot x \cdot x \cdot x$~~
 $\frac{x \cdot x \cdot x \cdot x \cdot x \cdot x \cdot x \cdot x \cdot x \cdot x}{x \cdot x \cdot x \cdot x \cdot x} = x^5$

15. $(x^4)^5 = x^9$
 You should multiply the exponents not add them
 $(x^4)(x^4)(x^4)(x^4)(x^4) = x^{20}$