

Section 1.1 – Expressions and Symbols

Problem Set 1

Simplify the following expressions.

1. $a^4 \cdot a^5$

2. $a^4 \cdot b \cdot b \cdot b^4$

3. $2b \cdot a + b \cdot a$

4. $\frac{3a^6}{6a^3}$

5. $\frac{3x^5}{4x} + \frac{3a^4}{a^2}$

6. $(a^5b^3)^2$

7. $\left((7p^3)^3 + \frac{12p^{10}}{4p} \right)^6$

8. $\frac{5s^4t^6}{2s^2t^2} + \frac{5s^6t^6}{s^4t^2}$

9. $-2m \cdot n^3 \cdot a^2 + a^2 \cdot m \cdot n \cdot n^2$

10. $\left(\frac{4y^3}{12y^2} \right)^3$

11. $\frac{zy^9}{xy^2}$

12. $\left(\frac{7a^{10}b^{10}}{a^9b^5} \right)^6$

13. $(2y^4 - 2y^4)^6 + y^4$

14. $(a + 3a)^3$

15. $\frac{8w^5q^8}{2w^3} + \left(\frac{q^4}{2} \right)^2 w^2$

16. $(x^6 \cdot y^3 \cdot z)^3$