

Name: _____

Show work needed to justify your answer.

Date: _____

HW: # 38: Math IBSL - Standard 37 - Exponents

5 points

In questions 1–10, use exponent laws to simplify the expression as far as possible.

1 $a^5 \times a^3 \times a^7$

2 $2x^3y^2 \times 7x^4y^6$

3 $4ab^3 \times 0.5a^6c$

4 $\frac{8m^5}{4m^3}$

5 $\frac{6u^5v^2}{9u^3v^3}$

6 $(3rs^3)^3$

7 $(-2x^4yz^5)^3$

8 $\left(\frac{x^{12}y^8}{x^5y^6}\right)^2$

9 $\frac{(5x)^2(5y^3)}{(5x^3y^4)^3}$

10 $\frac{9x^3(y^3)^3}{-81(x^{-2})^4y^{11}}$

11 Find an expression for the area of a square with side length $3x^2y$. Write your answer in its simplest form.

12 Find the area of a rectangle with width $4a^3b^2$ and length $\frac{5a}{2b^3}$. Write your answer in its simplest form.

1. a^{15}

2. $14x^7y^8$

3. $2a^7b^3c$

4. $2m^2$

5. $\frac{2u^2}{3v}$

6. $27r^3s^9$

7. $-8x^{12}y^3z^{15}$

8. $(x^7y^2)^2 \rightarrow \boxed{x^{14}y^4}$

9. $\frac{(25x^2)(5y^3)}{125x^9y^{12}} \rightarrow \frac{125x^2y^3}{125x^9y^{12}}$

= $\boxed{\frac{1}{x^7y^9}}$

10. $\frac{9x^3y^9}{-81x^{-8}y^{11}} \rightarrow \boxed{\frac{-1x^{11}}{9y^2}}$

11. $(3x^2y)^2 \rightarrow \boxed{9x^4y^2}$

12. $\frac{(4a^3b^2)}{1} \left(\frac{5a}{2b^3}\right) \rightarrow \frac{20a^4b^2}{2b^3} \rightarrow \boxed{\frac{10a^4}{b}}$