

**Question set 1**

Can you simplify these? (hint: yes you can)

1.  $x \cdot x^2$

2.  $x^3 \cdot x^4$

3.  $x^5 \cdot x^3$

Do you see a pattern? If so, describe it in the space below. If not, explain why no pattern exists.

**Question set 2**

Can you simplify these?

1.  $(2b)^2$

2.  $(ab)^2$

3.  $(3ab)^3$

Can you find a pattern? If so, describe it in the space below.

**Question set 3**

Can you simplify these?

1.  $(x^3)^2$

2.  $(5x^2)^3$

3.  $(3x^2y)^4$

Can you find a pattern? If so, describe it in the space below. If not, describe why no pattern exists.

If you have extra time after completing everything else, consider how we could simplify the following

$$\frac{x^6}{x^2}$$

$$\frac{x^2}{x^6}$$