

Playing with Indices

$$8^2 - 4^3 + 16^3 - 8^4 + 32^4 - 16^5 = ?$$

$$27^2 - 9^3 + 81^3 - 27^4 + 243^4 - 81^5 = ?$$

What's going on here?

Make another like this.

Can you generalise?

These might help...

$$4^3 - 8^2 = ?$$

$$8^4 - 16^3 = ?$$

$$16^5 - 32^4 = ?$$

$$9^3 - 27^2 = ?$$

$$27^4 - 81^3 = ?$$

$$81^5 - 243^4 = ?$$

$$(2^2)^3 - (2^3)^2 = 2^6 - 2^6$$

$$(3^3)^2 - (3^3)^2 = 3^6 - 3^6$$

