

# Combining index laws

Maths

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# Combining index laws

1. Simplify each expression.

a)  $\frac{t^4 \times t^5}{t^3}$

b)  $\frac{q^{15}}{q^7 \times q^5}$

c)  $\frac{g^8 \times g^4}{g^7 \times g^3}$

d)  $\frac{a^7 \times a^2}{a^8 \times a^5}$

2. True or false? Correct any false statements

a)  $(a^2)^3 \times a^4 = a^{24}$

c)  $y^{-6} \times (y^3)^2 = y^0$

b)  $(2t^5)^3 \times 3t = 6t^{16}$

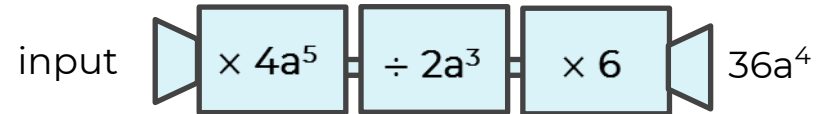
d)  $(3f^5)^2 \div 3f^5 = 3f^5$

3. For each statement find the value of m and/or p.

a)  $\frac{a^9}{a^m \times a^2} = a^4$

b)  $(2a^m)^3 \times pa^2 = 24a^{17}$

4. Work out the input of the function machine.



# Answers



# Combining index laws

1. Simplify each expression.

a)  $\frac{t^4 \times t^5}{t^3} = t^6$       b)  $\frac{q^{15}}{q^7 \times q^5} = q^3$

c)  $\frac{g^8 \times g^4}{g^7 \times g^3} = g^2$       d)  $\frac{a^7 \times a^2}{a^8 \times a^5} = a^{-4}$

2. True or false? Correct any false statements

a)  $(a^2)^3 \times a^4 = a^{24}$       c)  $y^{-6} \times (y^3)^2 = y^0$   
False.  $a^{10}$       True

b)  $(2t^5)^3 \times 3t = 6t^{16}$       d)  $(3f^5)^2 \div 3f^5 = 3f^5$   
False.  $24t^{16}$       True

3. For each statement find the value of m and/or p.

a)  $\frac{a^9}{a^m \times a^2} = a^4$        $m = 3$

b)  $(2a^m)^3 \times pa^2 = 24a^{17}$        $m = 5$        $p = 3$

4. Work out the input of the function machine.

