

# Power law for indices

Maths

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# Power law for indices

1. Simplify each expression.

a)  $(g^3)^2$       b)  $(t^2)^{25}$

c)  $(m^2)^3$       d)  $(y^{19})^0$

2. Spot the mistakes.

$$(2a^5)^3 = 2a^8$$

3. Simplify each expression.

a)  $(2f^4)^3$       b)  $(5b^6)^2$       c)  $(3n^{10})^4$

d)  $(4y^{-3})^2$       e)  $((-2)h^5)^4$

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

a)  $(3a^6)^m = 9a^{12}$       b)  $(pa^7)^3 = 125a^{21}$

c)  $(ma^{-3})^p = 64a^{-6}$       d)  $(2a^m)^p = 32a^{15}$

5. Simplify each expression.

a)  $(a^{2y+5})^3$

b)  $(h^{8-2f})^3$

c)  $(2g^{3t+4})^3$



# Answers



# Power law for indices

1. Simplify each expression.

a)  $(g^3)^2$   $g^6$     b)  $(t^2)^{25}$   $t^{50}$

c)  $(m^2)^3$   $m^6$     d)  $(y^{19})^0$   $y^0$

2. Spot the mistakes. Hasn't cubed the coefficient (2)  
 $(2a^5)^3 = 2a^8$  Added the powers instead of multiplying

3. Simplify each expression.

a)  $(2f^4)^3$   $8f^{12}$     b)  $(5b^6)^2$   $25b^{12}$     c)  $(3n^{10})^4$   $81n^{40}$     c)  $(2g^{3t+4})^3$   $8g^{9t+12}$

d)  $(4y^{-3})^2$   $16y^{-6}$     e)  $((-2)h^5)^4$   $16h^{20}$

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

a)  $(3a^6)^m = 9a^{12}$     b)  $(pa^7)^3 = 125a^{21}$   
 $m = 2$      $p = 5$

c)  $(ma^{-3})^p = 64a^{-6}$     d)  $(2a^m)^p = 32a^{15}$   
 $m = 8$      $p = 2$      $m = 3$      $p = 5$

5. Simplify each expression.

a)  $(a^{2y+5})^3$   $a^{6y+15}$

b)  $(h^{8-2f})^3$   $h^{24-6f}$

c)  $(2g^{3t+4})^3$   $8g^{9t+12}$

