

Multiplication law for indices

Maths

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Multiplication law for indices

1. Simplify the expressions.

a) $a \times a$

b) $b^5 \times b^2$

c) $c^{17} \times c^3$

d) $d^9 \times d \times d^3$

2. True or false?

$h^{-2} \times h^{-4} = h^2$

$k^3 \times k^{-2} = k$

$y^{-5} \times y^5 = y^0$

Correct any false statements

3. Simplify the following.

a) $a^{0.7} \times a^{2.3}$

b) $b^{2.3} \times b^{0.7}$

c) $c^{-0.36} \times c^{1.36}$

4. Simplify the expressions.

a) $2 \times a^3$

b) $3b \times 2b^2$

c) $6c^{-9} \times 10c^8$

d) $20d^{81} \times -5d^{19}$

e) $5e^{-4} \times 3e^{-3} \times -4e^{11}$



Multiplication law for indices

5. Work out the value of m and p in each.

a) $3a^m \times pa^6 = 6a^8$

b) $mb^{-5} \times 2b^p = 12b^3$

c) $-5c^m \times pc^{-3} = 30c^{-10}$

6. Expand the brackets.

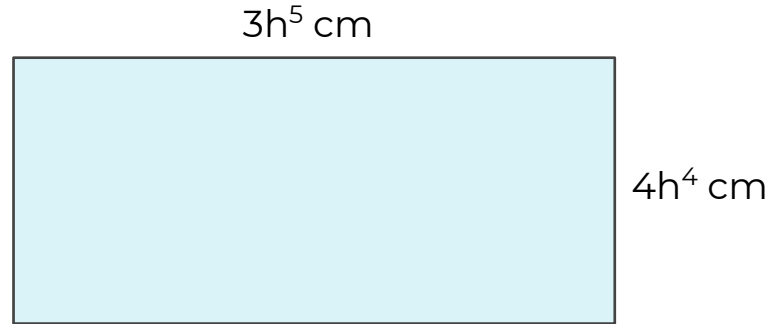
a) $k(5 - k)$

b) $w^3(w + 2)$

c) $3f^2(f^2 + 4)$

d) $2q^2(6 - 3q^3)$

7. A rectangle has a length of $3h^5$ cm and $4h^4$ cm. Write an expression for the area of the rectangle



Answers



Multiplication law for indices

1. Simplify the expressions.

a) $a \times a$ a^2

b) $b^5 \times b^2$ b^7

c) $c^{17} \times c^3$ c^{20}

d) $d^9 \times d \times d^3$ d^{13}

2. True or false?

$h^{-2} \times h^{-4} = h^2$ False. h^{-6}

$k^3 \times k^{-2} = k$ True

$y^{-5} \times y^5 = y^0$ True

Correct any false statements

3. Simplify the following.

a) $a^{0.7} \times a^{2.3}$ a^3

b) $b^{2.3} \times b^{0.7}$ b^3

c) $c^{-0.36} \times c^{1.36}$ $c^1 = c$

4. Simplify the expressions.

a) $2 \times a^3$ $2a^3$

b) $3b \times 2b^2$ $6b^3$

c) $6c^{-9} \times 10c^8$ $60c^{-1}$

d) $20d^{81} \times -5d^{19}$ $-100d^{100}$

e) $5e^{-4} \times 3e^{-3} \times -4e^{11}$ $-60e^4$



Multiplication law for indices

5. Work out the value of m and p in each.

a) $3a^m \times pa^6 = 6a^8$ $m = 2$ $p = 2$

b) $mb^{-5} \times 2b^p = 12b^3$ $m = 6$ $p = 8$

c) $-5c^m \times pc^{-3} = 30c^{-10}$ $m = -7$ $p = -6$

6. Expand the brackets.

a) $k(5 - k)$ $5k - k^2$

b) $w^3(w + 2)$ $w^4 + 2w^3$

c) $3f^2(f^2 + 4)$ $3f^4 + 12f^2$

d) $2q^2(6 - 3q^3)$ $12q^2 - 6q^5$

7. A rectangle has a length of $3h^5$ cm and $4h^4$ cm. Write an expression for the area of the rectangle

