

# Master Maths 9 Worksheet 22

## Exponentials 1

# 22

Name: .....

1. Write the following in exponent form.

(a)  $3 \times 3 \times 3 \times 3 \times 3 \times 3 \times 3$

(b)  $m \times m \times m \times m \times m$

(c)  $a$  to the power of 8

(d) -7 to the power of 11

(e)  $x \times y \times 2 \times x \times y \times y \times y \times 5$

2. Write the following in factor form.

(a)  $5^6$

(b)  $x^8$

(c)  $5a^2bc^4$

3. Evaluate the following *without* using a calculator.

(a)  $2^5$

(b)  $10^4$

(c)  $(-3)^3$




4. Use a calculator to evaluate the following.

(a)  $8^4$

(b)  $7^6$

(c)  $(-4)^7$




5. Use a calculator to evaluate the following. Give answers correct to one decimal place.

(a)  $7.1^5$

(b)  $5.3^4 + 2.8^3$

(c)  $(-3.8)^5$




(d)  $\frac{(7.8^5 + 8.7^6)^4}{9.77^{22}}$

6. Find the value of  $x$  if  $9^x = 531\,441$ .

7. Simplify the following.

(a)  $a^4 \times a^7$

(b)  $3a^4 \times 5a^7 \times 2a$



(c)  $2m^4n^3 \times 4m^7n^4 \times 3m^6n$

(d)  $x^9 \div x^3$

(e)  $12m^8 \div 6m$



(f)  $\frac{18a^6b^7c^5}{12a^2b^3c}$

(g)  $(3m^2)^5$



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

(i)  $\left(\frac{3a^2b^5}{2c^8d}\right)^3$



(j)  $x^0$

(k)  $6a^0b$

(l)  $(2m^3n)^0$




(m)  $\frac{36a^8b^5}{12a^8b^5}$

(n)  $\frac{45x^7y^5z}{30xy^5z}$



8. Write the following with positive indices.

$\frac{3}{5} m^5 n^{-3} p^{-1}$