SCORE A+

Algebra

With Classified answer book

8

Eng. Magda El-Labban

01007044107

4- Indices

1. (a) Simplify $m^3 \times m^6$

....

(b) Simplify $\frac{p^8}{p^2}$

....

(c) Simplify $(2n^3)^4$

....

2. (a) Simplify $m^6 \times m^7$

....

(b) Simplify x^0

....

3. (a) Simplify $m^5 \div m^3$

....

(b) Simplify $5x^4y^3 \times x^2y$

....

4. (a) Simplify $a^4 \times a^5$

.....

(b) Simplify $\frac{45e^6 f^8}{5ef^2}$

.....

5. (a) Simplify $m^2 \times m^4$

.....

(b) Simplify $y^7 \div y^5$

.....

(c) Simplify $(m^3)^5$

.....

6. Simplify fully

(a) $p^2 \times p^7$

.....

(b) $\frac{3q^4 \times 2q^5}{q^3}$

.....

(c) $(2xy^3)^5$

.....

7 a. Simplify $15y^6 \div 3y^2$

.....

b. Simplify $7wx^2 \times 3w^3x$

.....

8 Work out the value of

(a) $(2^2)^3$

.....

(b) 4^{-2}

.....

(c) $\sqrt{2^4 \times 9}$

.....

9 Write down the value of

(a) $\frac{x^6}{x^2}$

.....

(b) $(y^4)^3$

.....

10 Circle the expression that can be written as $2y^2$

$(2y)^2$ $2 \times 2 \times y$ $2 \times y \times y$ $2 \times 2 \times y \times y$

11. $7^5 \times 7^6 = 7^3 \times 7^k$

Find the value of k.

$k =$ .....

12. Simplify $\dfrac{q^3 \times q^4 \times q}{q^2}$ .....

13 Find the value of $3b^{-3}$ .....

14. Work out

a) $4y^0$ .....

b) $(2x)^{-2}$ .....

c) $\dfrac{7^2 \times 7^3}{7}$ .....

15. $7^3 \times 7^{m+2} = 7^5 \times 7^{-1}$

Find the value of m $k =$ .....

16. Work out the values of *m* and *n*

$5^8 \times 5^4 = 5^m$ $m =$ _____

$\frac{5^8}{5^4} = 5^n$

$n =$ _____

17. Which of these can be written as $16a^2b$?

Circle all the possible answers.

$2 \times 8 \times a \times a \times b$ $2 \times a \times a + 8 \times b$

$32 \times a \times a \times a \div (2 \times a \times b)$ $32 \times a \times a \times a \div (2 \times a) \times b$

18. Write as a single fraction in its simplest form $(5 \times g \times g \times g) \div (8 \times h \times h)$

19. Here is an equation. $x^y = 64$

Give four **different** pairs of values that satisfy this equation.

First pair	$x =$	$y =$ .....
Second pair	$x =$	$y =$ .....
Third pair	$x =$	$y =$ .....
Fourth pair	$x =$	$y =$ .....

20. Write:

a) 4 as a power of 2 .....

b) 9 × 33 as a power of 3 .....

c) $2^3 \times 4^5$ as a power of 2 .....

d) 16 × 26 as a power of 2 .....

f) 5 × 25 × 125 as a power of 5 .....

21. Work out the values of **c** and **d**.

$(x^c y^2)^d = x^{24} y^6$

Answer: $c =$---------- $d =$----------

22. Find the value of y in these equations.

a) $3^2 \div 3^4 = 3^y$ ....

b) $10^6 \div 10^y = 10^2$ ....

c) $14^2 \div 14^y = 14^{-4}$ ....

d) $8^y \div 8^3 = 8^4$ ....

23. Find the value of x in these equations.

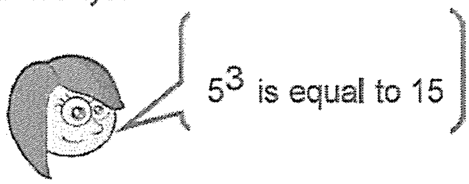
a) $2^3 \times 2^x = 2^9$ ....

b) $3^2 \times 3^x = 3^{-2}$ ....

c) $5^{-3} \times 5^x = 5^{-5}$ ....

d) $8^x \times 8^{-3} = 8$ ....

24. Lisa says.



Is she correct? explain your answer

25. Tick (✓) the expression that is closest to the square root of $3a^6$

$1.5a^2$ ☐

$1.5a^3$ ☐

$1.7a^2$ ☐

$1.7a^3$ ☐

$3a^3$ ☐