Student name: _____ Marks: _____ / 28

Algebra Quiz

Expressions

1. Simplify the following as much as possible. [total: 4]

(a) $2a - 4b + 7b - 2a$ [2] (b) $5x + x^2 + 2x^2 + 7x - 10$ [2]

2. Simplify the following expressions as much as possible. [total: 4]

(a) $4x \times 4y$ [2] (b) $\frac{24abc}{3bd}$ [2]

3. Expand: [total: 4]

(a) $-3(10u + v)$ [2] (b) $2p(5p + 7)$ [2]

4. Factorise $21hm - 9mx$ as much as you can. [3]

Solve one of the two questions below.

5. Find two terms that add to $8x^2$. [2]

6. Expand and simplify $2x(x - 1) - 3(x - 7)$. [3]

Index Laws

1. Which one of following is the largest? [1]

A. 10^2 B. 2^9 C. 7^3 D. 3^6

2. Simplify the following using index laws. You don't need to find the values. [total: 6]

(a) $7^3 \times 7 \times 7^8$ [1]

(b) $\dfrac{r^{12}}{r^3}$ [1]

(c) $\left(2b^2\right)^3$ [2]

(d) $\left(n^3\right)^5 \div n^8$ [2]

Solve one of the three questions below.

3. Fill in the blanks with numbers greater than 0 to make this equation true: [2]

$$2^{\square} \times \left(2^3\right)^{\square} = 2^{17}$$

4. Evaluate: [3]

$$\frac{2^{2022} \times 2^{2023}}{\left(2^{2022}\right)^2}$$

5. Which power of 27 is equal to 9^{300}? [3]

END OF QUIZ

Answer key

Expressions

1. (a) $3b$

(b) $3x^2 + 12x - 10$

2. (a) $16xy$

(b) $\frac{8a}{d}$

3. (a) $-30u - 3v$

(b) $10p^2 + 14p$

5. $4x^2$, $4x^2$ (or other valid answers)

6. $2x^2 - 5x + 21$

Index Laws

1. B

2. (a) 7^{12}

(b) r^9

(c) $8b^6$

(d) n^7

3. 2 and 5, or other valid answers.

4. 2

5. $9^{300} = 27^{200}$.