

Homework Logs

I will be collecting these right away.
Please finish filling them out.

Include the practice test from yesterday.

1. Which expression does this simplify to?

$$2(3x - 5) - 4(x - 3)$$

A $10x - 3$

B $2x - 17$

C $10x - 17$

D $2x + 3$

E $2x + 2$

$$\begin{aligned} & 2(3x - 5) - 4(x - 3) \\ & = 6x - 10 - 4x + 12 \\ & = 2x + 2 \end{aligned}$$

2. What is the value of $\left(\frac{-6}{5}\right)^2$?

A $\frac{36}{25}$

B $\frac{12}{10}$

C $-\frac{36}{25}$

D $-\frac{12}{10}$

3. What is the result when $(m^6)^3 \div m^2$ is simplified?

A m

B m^7

C m^{16}

D m^{11}

$$\begin{aligned} & (m^6)^3 \div m^2 \\ &= m^{18} \div m^2 \\ &= m^{18-2} \\ &= m^{16} \end{aligned}$$

4. What is the value of $(3^2)^4$?

A 6561

B 1296

C 729

D 9

$$\begin{aligned} & (3^2)^4 \\ &= 3^8 \\ &= 6561 \end{aligned}$$

5. What is the value of $\frac{3^6}{3^3}$?

A 1

B 3

C 9

D 27

$$\frac{3^6}{3^3}$$

$$= 3^{6-3}$$

$$= 3^3$$

$$= 27$$

6. Which group has 3 like terms?

A $4b$ $3a$ $2b$

B $2x$ $2y$ $2z$

C $3x^2y$ $-x^2y$ $4xy^2$

D $-mn^2$ $4mn^2$ $-5mn^2$

7. The expression $3a^2 + 2a^3 + b$ is a:

A monomial

B binomial

C trinomial

D term

$\underbrace{3a^2}_1 + \underbrace{2a^3}_2 + \underbrace{b}_3$

→ 3 terms!

8. The degree of $6x^4y + xy^3 + 1$ is:

A 2

B 3

C 4

D 5

degree 5 degree 4

don't forget about the
"invisible" 1s

9. $4a + 2b - a - 3b$ can be simplified to:

- A $3a - b$
- B $5a - 5b$
- C $3a - 5b$
- D $3a + b$

$$\begin{aligned} &= 4a - a + 2b - 3b \\ &= 3a - b \end{aligned}$$

10. Match each expression/term in Column I with an appropriate example from Column II. You may choose to use one answer from Column II more than once or not at all.

Column I	Column II
a) degree three <u>E</u>	A. $3x^2 + 5y$
b) binomial <u>A</u>	B. $3x^4 + 5y - 3$
c) constant <u>F</u>	C. the "5" in $3x^2 + 5y$
d) one term <u>D, E, F</u>	D. $3x^5$
e) coefficient <u>C (or F)</u>	E. $6x^2y$
f) trinomial <u>B</u>	F. 5

11. Write as a single power, then evaluate.

a) $(-1)^4 \times (-1)^5 \div (-1)^6$

$$= (-1)^{4+5} \div (-1)^6$$

$$= (-1)^9 \div (-1)^6$$

$$= (-1)^{9-6}$$

$$= (-1)^3$$

$$= -1$$

b)
$$\frac{8^7 \times 8^3}{(8^2)^4} = \frac{8^{7+3}}{8^{2 \times 4}}$$
$$= \frac{8^{10}}{8^8}$$
$$= 8^2$$
$$= 64$$

12. Simplify.

a) $\frac{v^9 \times v^1}{v^3}$

$$= \frac{v^{10}}{v^3}$$

$$= v^{10-3}$$

$$= v^7$$

$$\begin{aligned} \text{b)} \quad & (b^3)^3 \times 2b^5 \\ & = b^{3 \times 3} \times 2b^5 \\ & = 1b^9 \times 2b^5 \\ & = 2b^{9+5} \\ & = 2b^{14} \end{aligned}$$

$$c) -12m^3n^2 \div 3mn^2$$

$$= -4m^{3-1}n^{2-2}$$

$$= -4m^2n^0$$

$$= -4m^2$$

d) $(-4x^2y^5)^3$

$$= (-4)^3 (x^2)^3 (y^5)^3$$

$$= -64 x^{2 \times 3} y^{5 \times 3}$$

$$= -64 x^6 y^{15}$$

13. Simplify.

a) $(3x - 1) + (4 - 2x)$

$$= \boxed{3x} \ominus \ominus + 4 \boxed{-2x}$$

$$= 3x - 2x - 1 + 4$$

$$= 1x + 3$$

b) $(2 + y) - (3 - 2y)$

$$= \boxed{2} \textcircled{+y} \boxed{-3} \textcircled{+2y}$$

careful!!

$$= 2 - 3 + y + 2y$$

$$= -1 + 3y$$

OR

$$3y - 1$$

14. Expand and simplify.

a) $5(p+3) + 4(p-6)$

$$= 5p + 15 + 4p - 24$$

$$= 9p - 9$$

$$\mathbf{b)} \quad 6[x - (2x + 1)]$$

$$= 6(x - 2x - 1)$$

$$= 6(-x - 1)$$

$$= -6x - 6$$

15. Evaluate when $x = -1$ and $y = 3$

a) $-4x - 6y$

$$= -4(-1) - 6(3)$$

$$= 4 - 18$$

$$= -14$$

$$\mathbf{b) } 3x^5$$

$$= 3(-1)^5$$

$$= 3(-1)$$

$$= -3$$

$$c) 5y^2 - 6x^3$$

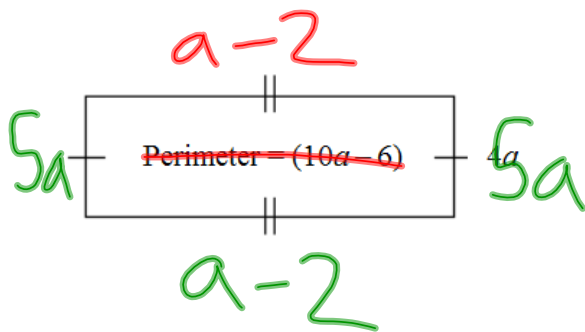
$$= 5(3)^2 - 6(-1)^3$$

$$= 5(9) - 6(-1)$$

$$= 45 + 6$$

$$= 51$$

17. A rectangular field has a length of $a-3$ meters and a width of $4a$ meters.
- a) Determine a **simplified expression** that represents the perimeter of this field.
- b) Determine a **simplified expression** that represents the area of this field.
- (Hint: Use your knowledge of area, perimeter, polynomials, and collecting like terms)



$$P = (a-2) + (5a) + (a-2) + (5a)$$

$$P = \underbrace{1}_{\text{green}} \underbrace{a-2}_{\text{red}} + \underbrace{5a}_{\text{green}} + \underbrace{1}_{\text{green}} \underbrace{a-2}_{\text{red}} + \underbrace{5a}_{\text{green}}$$

$$P = 12a - 4$$

$$A = l \times w$$

$$= (5a)(a-2)$$

$$= 5a \overbrace{(a-2)}^{\text{blue arrow}}$$

$$= 5a^2 - 10a$$

18. Expand and simplify

$$\boxed{3x}(x^2 - 2x + 7) - \boxed{2x}(x - 1) - \boxed{5}(2x - 1)(\boxed{3x})$$

$$= 3x^3 - 6x^2 + 21x - 2x^2 + 2x + \boxed{(-10x + 5)(3x)}$$

$$-30x^2 + 15x$$

$$= 3x^3 - 38x^2 + 38x$$