

**Math 9 - Chapter 5 - Pretest**

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**Multiple Choice - PART 1 - NON-CALCULATOR - 15 MINUTES**

Circle the choice that best completes the statement or answers the question.

- In the term  $4s^2t^2$ , the number 4 is best described as being the  
 a. coefficient      b. exponent      c. polynomial      d. variable
- The term  $4z^3$  represents the  
 a. difference between 4 and  $z^3$       c. quotient of 4 and  $z^3$   
 b. product of 4 and  $z^3$       d. sum of 4 and  $z^3$
- The expression  $3s^2 - 4s + 2$  can be described as a(n)  
 a. binomial      b. equation       c. polynomial      d. term
- What is the degree of the term  $3p^2$ ?  
 a. 1       b. 2      c. 3      d. 5
- What is the degree of the polynomial  $5g^2 + 2gh - h^2 + 7$ ?  
 a. 1       b. 2      c. 4      d. 7
- Combine the like terms in  $4g^2 - 2g^2 + 2g - 3g + 7$ . The answer is  
 a.  $2g^2 - 3g + 7$        b.  $2g^2 - g + 7$       c.  $2g^2 + 5g - 7$       d.  $6g^2 - g + 7$
- Simplify  $(3a^2 + 2ab - 4) + (2a^2 - 5ab - 6)$ . The answer is  
 a.  $5a^2 + 7ab + 10$        b.  $5a^2 - 3ab - 10$       c.  $5a^2 - 3ab + 10$       d.  $5a^2 - 3ab - 10$
- Add the following polynomials.  $(3k^4 - 2k^3 + k) + (3k^3 - k^2 + 3k) + (6 + 3k^2 - 2k^4) = k^4 + k^3$   
 a.  $k^4 + k^3 + 2k^2 + 4k + 6$       c.  $-2k^4 - 2k^3 - 2k^2 + k + 6$   
 b.  $3k^4 + 3k^3 + 3k^2 + 3k + 6$       d.  $k^4 - k^3 - 2k^2 + 4k - 6$

**Multiple Choice - PART 2 - CALCULATOR may be used after 15 minutes**

- In the expression  $2y^3 + 4y - 5$ , the 2 is a(n)  
 a. coefficient      b. exponent      c. term      d. variable

10. In the expression  $3d^4 + 5d^2 - 15$ , the  $d$  is a(n)  
 a. coefficient      b. exponent      c. term      **d. variable**

11. Simplify the following expression by grouping like terms.  $2m - 3m^2 + 3m - 6 - m + 5m^2 + 2$   
 a.  $-8m^2 - 2m - 4$       **b.  $2m^2 + 4m - 4$**       c.  $-3m^2 + 6m - 8$       d.  $-8m^2 + 5m - 4$

$C = p^2$  — The school band has decided to sell coupon books to raise money. The cost of the coupon book is the square of the profit,  $p$ , from the sale of the book. The sale price of the book is 4 times the profit,  $p$ , from the sale of a coupon book. Use this information to answer questions 12 - 15. —  $SP = 4p$

12. The term or polynomial that best shows the cost of a coupon book would be  
 a.  **$p^2$**       b.  $4p$       c.  $p^2 - 4p$       d.  $4p - p^2$

13. The term or polynomial that best shows the sale price of a coupon book would be  
 a.  $p^2$       **b.  $4p$**       c.  $p^2 - 4p$       d.  $4p - p^2$

14. The term or polynomial that best shows the profit from selling a coupon book would be  
 a.  $p^2$       b.  $4p$       c.  $p^2 - 4p$       **d.  $4p - p^2$**        $SP - C$

15. The expression that best shows the profit if the band bought 500 coupon books but only sold 450 coupon books would be  
 a.  $500p^2$       b.  $500(4p)$       c.  $500p^2 - 450p$       **d.  $450(4p) - 500p^2$**

16. The opposite expression for  $2x^2 - 4x + 3$  is  
 a.  **$-2x^2 + 4x - 3$**       b.  $\cancel{2x^2} + 4x + 3$       c.  $-2x^2 \cancel{4x} - 3$       d.  $\cancel{2x^2} - 4x + 3$

17. Subtract the following polynomials.  $(7j^2 - 2j) - (-4j + 5)$   
 a.  $7j^2 + 4j - 5$       c.  $7j^2 - 2j - 5$   
**b.  $7j^2 + 2j - 5$**       d.  $7j^2 + 6j \cancel{- 5}$

$$\underline{7j^2 - 2j + 4j - 5}$$

18. Simplify by combining like terms.  $(6w^2 - 4w + 2) + (2w^2 + 6w + 3) - (4w^2 + w - 6) - (3w - 3w^2 + 7)$   
 a.  **$7w^2 - 2w + 4$**       b.  $w^2 + 6w + 18$   
 c.  $w^2 + 6w + 4$       d.  $9w^2 - 2w + 2$

$$\begin{array}{r} + 2w^2 + 6w + 3 \\ - 4w^2 - w + 6 \\ + 3w^2 - 3w - 7 \\ \hline 7w^2 \end{array}$$

## Matching

Match the correct term to each of the following descriptions. A term may be used more than once or not at all. Place the correct letter in the blank beside the number.

- a. binomial
- b. monomial
- c. opposite expressions
- d. polynomial
- e. trinomial

- c 19. two expressions that add to zero
- b 20. the specific name for an expression with one term
- e 21. the specific name for an expression with three terms
- d 22. an algebraic expression made up of terms connected by operations of addition and/or subtraction

## Problem

23. Tony wants to sell some of his old CDs and computer games so he can buy a new game machine. The new machine will cost \$300. He plans to spend \$25 advertising the 21 CDs and 16 computer games he has to sell.

a) Write an expression to show how much money Tony will receive from selling his CDs and games.

$$\text{CD} = c$$

$$\text{games} = g$$

$$21c + 16g$$

b) If Tony sells his CDs for \$6 each and his games for \$9 each, will he have enough to buy the new machine?

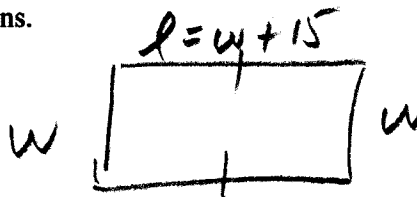
$$21 \times 6 = 126$$

$$16 \times 9 = 144$$

$$\begin{array}{r} 126 \\ 144 \\ \hline \$270 \end{array} \text{ not enough}$$

24. A rectangle's length is 15 cm greater than its width,  $w$ .

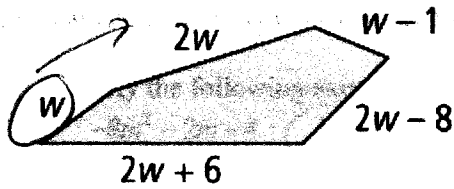
a) Draw the rectangle and label its dimensions.



b) Write and simplify an expression for its perimeter.

$$\begin{array}{l} w + 15 + w + w + 15 + w \\ \text{OR} \\ 2w + 30 + 2w \\ \text{OR} \\ 2(w + 15 + w) \\ \text{OR} \\ 2(2w + 15) \end{array} \left. \vphantom{\begin{array}{l} w + 15 + w + w + 15 + w \\ 2w + 30 + 2w \\ 2(w + 15 + w) \\ 2(2w + 15) \end{array}} \right\} = 4w + 30$$

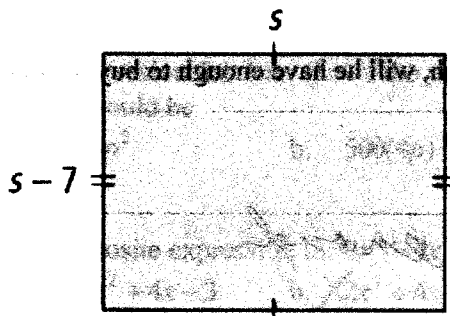
25. Write a simplified expression to describe the perimeter of the figure shown below.



work 
$$\underline{w} + \underline{2w} + \underline{w-1} + \underline{2w-8} + \underline{2w+6}$$

simplified 
$$8w - 3$$

26. a) Write a simplified expression representing the perimeter of the figure.



or 
$$s + s - 7 + s + s - 7$$
  

$$2s + 2(s - 7)$$

$$= 4s - 14$$

b) If  $s = 12$  m, what is the perimeter of the figure?

$$4(12) - 14$$
  

$$48 - 14$$

$$= 34 \text{ m}$$