Name _____ Date _____ Score _____

TEST 2

Algebra 1

Units 2–4

DIRECTIONS: Show all of your work neatly in pencil in the space provided. Copy your answers from your work space into the space provided for the answer. Use another sheet to keep all work and answers covered at all times.

TRUE-FALSE: If the statement is always true, write *true* in the space; if the statement is *not* always true, write *false* in the space. *(–3 each)*

False **1.** The expression $2x^2 + 4x - 7$ is a binomial.

False **2.** The type of graph that shows how all of the parts relate to the whole is the bar graph.

True **3.** The graph which represents gradual or continuous changes is the curved-line graph.

True **4.** The expression $6x^2 - 2x + 12$ is a polynomial.

False **5.** The expression $5x^2yz$ contains four terms.

Write an equation for the following problems and solve. *(–3 each part)*

$x + 3x = 92$ or $x + \frac{1}{3}x = 92$
23, 69

6. Separate 92 into two parts, one of which is $\frac{1}{3}$ of the other.

$x + 3x = 420$
105 miles

7. Mary and her father took an all-day automobile ride, going 3 times as far in the afternoon as in the morning. In all they traveled 420 miles. How far did they travel in the morning?

$x + 2x - 12 = 42$
18 girls; 24 boys

8. In a class of 42 students, the number of boys is 12 fewer than twice the number of girls. Find the number of boys and girls.

Write in abbreviated form. *(–2 each)*

b^2d^4	**9.** *bbdddd*
$4a^3bc^2$	**10.** *4aaabcc*
m^4s^2t	**11.** *mmmmsst*
$6a^3b$	**12.** *6aaab*

Find the value of each of the following expressions when $x = 3$, $y = 2$, $m = 4$, $n = 1$, and $a = 0$. *(–3 each)*

24	**13.** xy^3
36	**14.** $(y + m)^2$
2	**15.** $\frac{m^2}{4y} + \frac{ax}{7m}$
8	**16.** $m + xy - m \div y$
15	**17.** $(m - n)(x + y)$

Collect and unite similar terms. *(–3 each)*

$3a^2 + 2a + 1$	**18.** $5a^2 + a + 4 + 3a - 2a^2 - 3 - 2a$
$9a + 3b$	**19.** $7a + b + 5b - 2a - 3b + 4a$
$4x^2 + 4x + 4$	**20.** $3x^2 + x + 6 - x^2 + 5x - 4 + 2x^2 - 2x + 2$
$4mn + 11$	**21.** $8mn + 10 - 6mn + 2mn - 5 - 2 + 8$

Name _____

LITERAL EQUATIONS: Write an equation to solve for the variable indicated. *(–4 each)*

$r = \frac{i}{pt}$

22. Solve for r in the formula $i = prt$.

$r = \frac{C}{2\pi}$

23. Solve for r in the formula $C = 2\pi r$.

$b = \frac{P - 2a}{2}$ or $b = \frac{P}{2} - a$

24. Solve for b in the formula $P = 2a + 2b$.

$h = \frac{2A}{b + b'}$

25. Solve for h in the formula $A = \frac{1}{2}h(b + b')$.

Solve each formula for the variable indicated. *(–4 each)*

24 sq. in.

26. Find A in the formula $A = bh$ when $b = 6$ in. and $h = 4$ in.

60 sq. in.

27. Find A in the formula $A = \frac{1}{2}h(b + b')$ when $h = 6$ in., $b = 12$ in., and $b' = 8$ in.

20°

28. Find C in the formula $C = \frac{5}{9}(F - 32°)$ when $F = 68°$.

5

29. Find l in the formula $V = lwh$ when $V = 70$, $w = 7$, and $h = 2$.