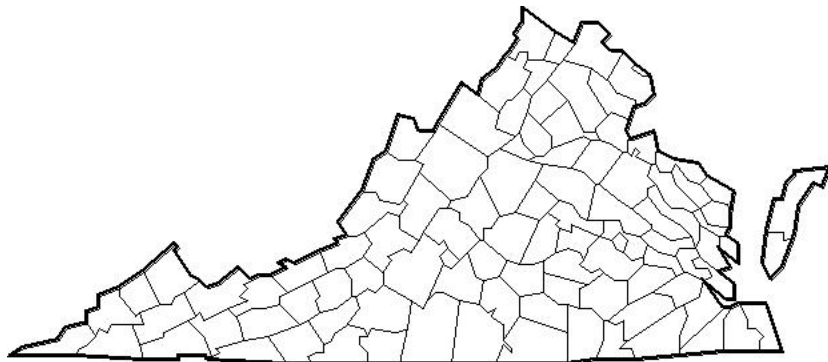# TESTS FOR HIGHER STANDARDS

MATHEMATICS
2009 Standards

GRADE LEVEL TEST
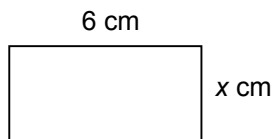
Algebra I

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A.2b
10. Which expression represents the perimeter of the rectangle below?

6 cm

x cm

A $(x + 6)$ cm
B $(6x)$ cm
C $6x^2$ cm
D $(2x + 12)$ cm

A.2b
11. Which expression is equivalent to $(3n+3)-(2n-2)$?

A $n^2 + 7$
B $n+3$
C $n+5$
D $n-5$

A.2c
12. Factor completely: $2x^2 + 7x - 30$.

A $(x+5)(2x-3)$
B $(2x+5)(x-6)$
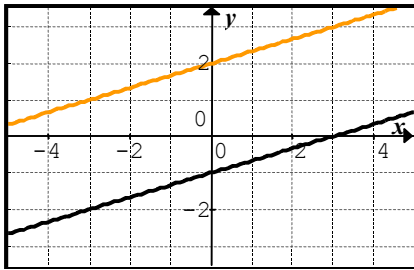**C** $(2x-5)(x+6)$
D $2(x-3)(x+5)$

A.2c
13. Which of the following polynomials is prime?

A $n^2 - 6n + 5$
B $a^2 - 16a + 64$
C $a^2 - 4a - 12$
D $n^2 - 8n + 1$

A.4e

25. Which of the following statements is <u>false</u> in regards to the system of equations shown in the graph below?

A   The system would have no solution.
B   The lines have identical slopes.
C   The two lines run parallel.
D   The number of solutions is infinite.

A.4f

26. A barnyard has c number of chickens and p number of pigs. There are exactly 20 animals and 56 legs. How many chickens and pigs are there?

A   3 chickens and 5 pigs
B   11 chickens and 9 pigs
C   12 chickens and 8 pigs
D   20 chickens and 4 pigs

A.4f

27. David and Tony are brothers. The total of their ages is 103. However, Tony is 7 years older than David. Using d to represent David's age and t to represent Tony's age, which system of equations could be used to determine each brother's age?

A $d + t = 103$
      $t = d + 7$

B $d + t = 103$
      $d = t + 7$

C $d + t + 2 = 103$
      $t = d + 7$

D $2(d + t) = 103$
      $t = d + 7$

A.8
46. What type of variation exists in this table?

x	y
1	3
2	6
3	9
4	12
5	15

A   direct variation
B   inverse variation
C   no variation
D   joint variation

A.8
47. The chart below indicates the relationship between *x* and *y*.

x	1	2	3	4	6
y	24	12	8	6	4

How would you describe the relationship between *x* and *y*?

A   *x* is directly related to *y*
B   *y* is directly related to *x*
C   *x* and *y* are inversely related
D   no relationship exists between *x* and *y*

A.8
48. *a* varies directly with *b* and the constant of variation is $\frac{1}{4}$. Which equation represents the relationship?

A $a = \frac{1}{4}b$

B $a = 4b$

C $a = b + \frac{1}{4}$

D $a = b - \frac{1}{4}$