

First & Last Name: _____ Period: _____ ID: A

Directions: Try to be clear and precise with your responses. You may use a calculator on this test, but support each solution by showing all your thinking for maximum credit. "Tell the truth - all the time."

FFPC INV. 1-2 Practice Test Algebra 8r (Mazzeo 2011)

1. A rectangle has a perimeter of 150 centimeters and a side of length l centimeters.
 - a. Write an equation for the area A of the rectangle in terms of l .
 - b. What is the greatest area possible for a rectangle with this perimeter? What are the dimensions of the rectangle with this maximum area?

2. The area A of a rectangle with a side of length l meters and a fixed perimeter is given by the equation $A = l(240 - l)$.
 - a. What are the dimensions of the rectangle with the greatest area possible for this perimeter? Explain how you found your answer.
 - b. What is the fixed perimeter for the rectangles represented by this equation? Explain how you found the perimeter.

3. Write an equivalent expression in expanded form.

a.) $4y(y - 5)$

b.) $(2k + 7)(4k - 9)$

c.) $(6w + 5)(w - 3)$

c.) $(3n + 2)(4 - 7n)$

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4. Write the expression in factored form:

a.) $2x^2 + 28x - 64$

b.) $3c^3 - 27c^2$

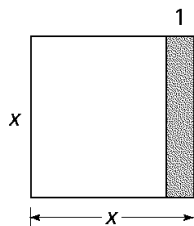
c.) $m^2 - 19m + 48$

d.) $8v^2 + 2v - 15$

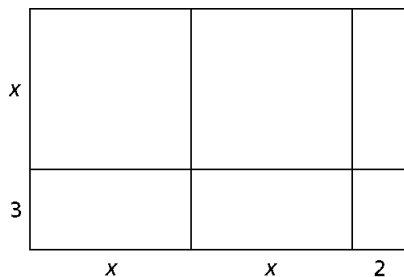
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Write two expressions, one in factored form and one in expanded form, for the area of the unshaded region.

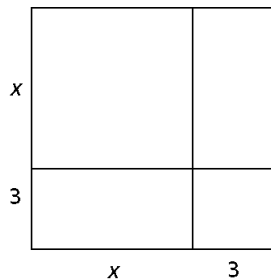
5.



6.



7.



8. Circle any expression that is quadratic.

a. $x^2 + 7$

b. $2(x + 7)$

c. $x(x + 7)$

d. $(x + 4)(x - 2)$

e. $(6 + 5)(x + 2)$

f. $(x - 3)(4)$

g. $2x + 9$

h. $x^2 + 9$

i. $x + x + 9$

9. A square has sides of length x centimeters. A new rectangle is created by increasing one dimension by 2 centimeters and doubling the other dimension and then adding 2 centimeters. Write two expressions, one in factored form and one in expanded form, for the area of the new rectangle and draw the area model to support.
- .
10. **a.** When an equation is in factored form, explain how you know whether it represents a quadratic relationship. Give an example to support your response.
- b.** When an equation is in expanded form, explain how you know whether it represents a quadratic relationship. Give an example to support your response.
- c.** Explain how you can tell whether a graph represents a quadratic relationship. Give an example to support your response.