

Name _____
Review 1
Seeing Structure in Expressions

Algebra 1 Final

A-SSE.1, A-SSE.2

1. The “Bulbs on the Bay” Holiday drive-through attraction charges \$12 per car plus \$1 for every individual, (p), in the car. Which choice represents the total cost (c) per car?

(1) $c = p + 12$

(2) $c = 12(p + 1)$

(3) $c = 12p + 1$

(4) $c = 1 \cdot (12p)$

2. In the expression $5x^3 - 4x^2 + 2x + 3$, what is the coefficient of the cubic term?

(1) -4

(2) -3

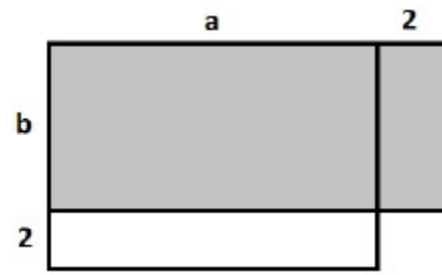
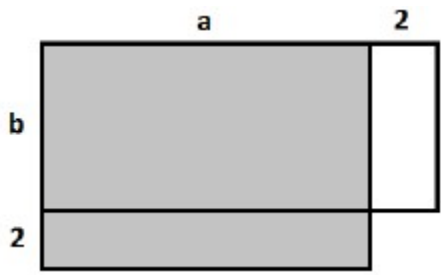
(3) 2

(4) 5

3. Maria thinks $(a + b)^2 = a^2 + b^2$. Is she correct? Justify your reasoning.

4. Use the distributive property to write an expression equivalent to $(x + y + 3)(y + 1)$.

5. Given that $a > b$, which of the shaded regions is larger. Justify your reasoning.



6. Write a mathematical proof of the algebraic equivalence of $(pq)r$ and $(qr)p$.

7. Express the total weight, (p) , of a filled watering pail, if the pail weighs 12 pounds and the water weighs 8.3 pounds per gallon? Let g represent the total number of gallons.

(1) $p = (8.3)(12)$

(3) $8.3g - 12$

(2) $8.3g + 12$

(4) $p = 12g + 8.3$

8. Assume b represents the number of boys and g represents the number of girls in a classroom. We know that there is at least one boy and one girl, and there are more girls than boys. Which expression would have a larger value?

(1) $\frac{g-b}{2}$

(2) $\frac{g+b}{2}$

(3) There is not enough information.

(4) Both expressions are equal

9. Factor: $m^2 - 12m + 36$

10. Factor: $x^2 - 2x - 15$

11. The expression of $64 - x^4$ is equivalent to which other expression?

(1) $(8 - x^2)(8 - x^2)$ (3) $(x^2 - 8)(x^2 - 8)$

(2) $(8 - x^2)(8 + x^2)$ (4) $(x^2 - 8)(x^2 + 8)$

12. $6x^2 - 5x - 4$ is equivalent to:

(1) $(6x - 1)(x + 4)$ (3) $(x - 1)(6x - 4)$

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