

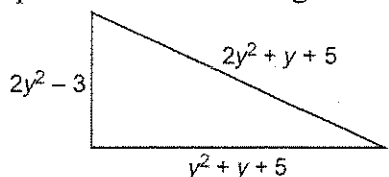
Master 5.17

Unit Test: Unit 5 Polynomials

- Use algebra tiles to model the polynomial that fits each description. Sketch the tiles you used.
 - A binomial that contains the variables x and y , with constant term -2 , and the coefficient of the other term is -3
 - A trinomial that contains the variable k , the coefficient of the second degree term is -1 , the coefficient of the first degree term is 1 , and the constant term is -8

- For each polynomial, write an equivalent polynomial.
 - $5a - b$
 - $7q^2 - 2q - 1$

- Write an expression for the perimeter of this triangle. Simplify the polynomial. Determine the perimeter if $y = 3$ cm.

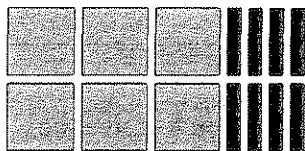


- Create one addition and one subtraction question that gives this result.



- Add or subtract.
 - $(3x + 6) - (x - 2)$
 - $(3y + 7y^2 + 9) - (3y^2 + 4y)$
 - $(x - 3x^2) + (7 + 3x - 3x^2)$
 - $(-5y^2 - y + 9) - (-2y^2 - y - 4)$

- Write the multiplication sentence and the division sentence modelled by this set of algebra tiles.



- Multiply or divide.
 - $-2(-5r - 3)$
 - $(12p^2 - 18p + 24) \div (-6)$
 - $(1 + 3f - 4f^2)(-6)$
 - $(8y^2 - 6y + 2) \div (-2)$

- Here is a student's solution for this question:

$$\begin{aligned} & 3x(2x + 1) \\ &= 6x + 3x \\ &= 9x \end{aligned}$$

Identify the errors in the solution, then give the correct solution.

- The perimeter of a rectangle is $8s^2 + 12s$. If the width of the rectangle is $4s$, what is the length? Explain your strategy.

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Unit 5 Test Sample Answers

Unit Test – Master 5.17

1. a) $-3xy - 2$



b) $-k^2 + k - 8$



2. a) $-b + 5a$

b) Answers will vary; possible solutions are $-2q + 7q^2 - 1, 7q^2 - 1 - 2q$

3. $(2y^2 - 3) + (y^2 + y + 5) + (2y^2 + y + 5) = 5y^2 + 2y + 7; 58 \text{ cm}$

4. Answers will vary; a possible solution for addition is $(x^2 - 3x - 1) + (x^2 - x - 1) = (2x^2 - 4x - 2)$; a possible solution for subtraction is $(5x^2 - 9x - 3) - (3x^2 - 5x - 1) = (2x^2 - 4x - 2)$

5. a) $2x + 8$ b) $4y^2 - y + 9$
 c) $-6x^2 + 4x + 7$ d) $-3y^2 + 13$

6. $2(3x^2 - 4x) = 6x^2 - 8x;$
 $(6x^2 - 8x) \div 2 = 3x^2 - 4x$

7. a) $10r + 6$ b) $-2p^2 + 3p - 4$
 c) $-6 - 18f + 24f^2$ d) $-4y^2 + 3y - 1$

8. The product of $3x$ and $2x$ is $6x^2$, not $6x$; then, since $6x^2$ and $3x$ are not like terms, they cannot be combined. The correct answer is: $6x^2 + 3x$.

9. There will be two sides with the measurement $4s$, and that will be a total of $8s$, because $2(4s) = 8s$. Subtract $8s$ from the total perimeter.
 $(8s^2 + 12s) - 8s = 8s^2 + 4s$. The other two sides of the rectangle are represented by $8s^2 + 4s$; divide this measurement by 2 to find the length of each side.
 $(8s^2 + 4s) \div 2 = 4s^2 + 2s$