

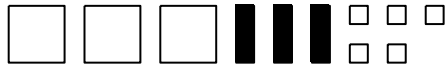
TASK 2: Review Polynomial Unit Test

Name: _____

Multiple Choice: *Identify the choice that best completes the statement or answers the question.*

- _____ 1. A large white square represents an x^2 -tile, a black rectangle represents a $-x$ -tile, and a small white square represents a 1-tile.

Write the polynomial represented by this set of algebra tiles.



- a. $3x^2 - x^3 + 5$ b. $-3x^2 + 3x + 5$ c. $3x^2 - 3x + 5$ d. $3x - 3x^2 + 5$

- _____ 2. How many terms are in the polynomial $10x^2 + 5x - 11$?

- a. 10 b. 1 c. 11 d. 3

- _____ 3. Which of the following expressions is a binomial with degree 2?

- i) $x^2 - 6x + 5$
 ii) $3x^2$
 iii) $5x^2 - 2x$
 iv) $\frac{1}{x^2} - 7$

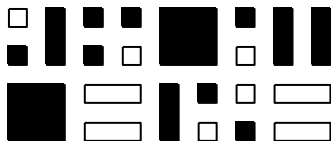
- a. i b. ii c. iv d. iii

- _____ 4. What algebra tiles would you use to model the polynomial $6 - 4x^2 + 4x$?

- a. 6 x^2 -tiles, 4 $-x$ -tiles, and 4 1-tiles
 b. 2 x^2 -tiles, 4 x -tiles
 c. 4 $-x^2$ -tiles, 4 x -tiles, and 6 1-tiles
 d. 4 x^2 -tiles, 4 $-x$ -tiles, and 6 -1 -tiles

- _____ 5. A large white square represents an x^2 -tile, a large black square represents a $-x^2$ -tile, a white rectangle represents an x -tile, a black rectangle represents a $-x$ -tile, a small white square represents a 1-tile, and a small black square represents a -1 -tile.

Write the simplified polynomial.



- a. $2x^2 + 2$ c. $2x^2 + x + 2$
 b. $-2x^2 + x - 2$ d. $-2x^2 - 2$

_____ 6. Simplify: $10x^2 - 8 + 3x + 5 - 6x^2 - 6x$

a. $4x^2 - 3x + 3$

c. $4x^2 + 3x + 3$

b. $4x^2 - 3x - 3$

d. $4x^4 - 3x^2 - 3$

_____ 7. Add: $(-3x - 7) + (5 - 2x)$

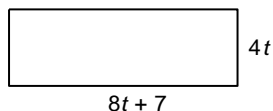
a. $-5x - 2$

b. $-5x + 12$

c. $-5x + 2$

d. $5x + 2$

_____ 8. Write the perimeter of this rectangle as a polynomial in simplest form.



a. $12t + 7$

b. $24t + 14$

c. $38t$

d. $24t + 7$

_____ 9. Subtract: $(6x - 3) - (11x - 8)$

a. $-5x + 11$

b. $-5x + 5$

c. $-5x - 5$

d. $-5x - 11$

_____ 10. Subtract: $(3x - 7x^2 + 2) - (4x^2 - 5 + 6x)$

a. $-11x^2 + 3x - 7$

c. $-11x^2 - 3x + 7$

b. $-11x^2 - 9x - 3$

d. $11x^2 + 3x - 7$

_____ 11. Multiply: $(-2)(4c^2 - 6c - 7)$

a. $-8c^2 - 12c - 14$

c. $-8c^2 + 12c + 14$

b. $2c^2 - 8c - 9$

d. $-8c^2 - 6c - 7$

_____ 12. Divide: $\frac{-12y^2 - 6y - 9}{-3}$

a. $-15y^2 - 9y - 12$

c. $4y^2 - 6y - 9$

b. $4y^2 + 2y + 3$

d. $-4y^2 - 2y - 3$

Short Answer

13. Identify the polynomials that can be represented by the same set of algebra tiles. Sketch Tiles!

i) $v^2 - 4 + 6v$

ii) $4 + r^2 - 6r$

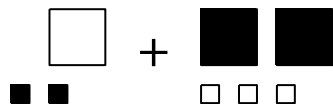
iii) $t^2 - 6t - 4$

iv) $6x + x^2 - 4$

v) $y^2 - 6y + 4$

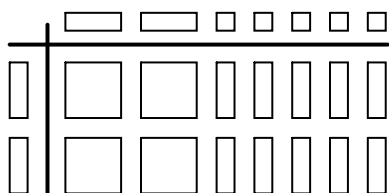
14. A large white square represents an x^2 -tile, a large black square represents a $-x^2$ -tile, a small white square represents a 1-tile, and a small black square represents a -1 -tile.

Write the polynomial sum modelled by this set of tiles.



15. A large white square represents an x^2 -tile, a white rectangle represents an x -tile, and a small white square represents a 1-tile.

Write a division sentence that is modelled by these algebra tiles.



16. Here is a student's solution for this question:

Multiply: $4x(-3x - 5)$

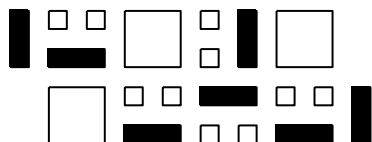
$$4x(-3x - 5) = -12x^2 - 20$$

Identify any errors in the solution.

Problem

17. A large white square represents an x^2 -tile, a large black square represents a $-x^2$ -tile, a white rectangle represents an x -tile, a black rectangle represents a $-x$ -tile, a small white square represents a 1-tile, and a small black square represents a -1 -tile.

Write the polynomial represented by this set of algebra tiles.



18. A large white square represents an x^2 -tile, a large black square represents a $-x^2$ -tile, a white rectangle represents an x -tile, a black rectangle represents a $-x$ -tile, a small white square represents a 1-tile, and a small black square represents a -1 -tile.
- Sketch algebra tiles to model the polynomial $3x^2 - 4 + 2x$.
Identify the variable, degree, number of terms, coefficient, and constant term.
 - Write another polynomial that is equivalent to the polynomial in part a. Explain how you know that the polynomials are equivalent.

19. Write a polynomial with the given variable, degree, coefficient, and number of terms.
- Variable: p ; degree: 2; coefficients: 2, -4 ; number of terms: 2
 - Variable: c ; degree: 1; coefficient: 6; number of terms: 1

20. Identify the equivalent polynomials. Explain how you know.

i) $3x^2 + 3x - 4 + 2x^2 - 6x - 3$

ii) $x^2 + 12 + 2x - 5 - 5x + 4x^2$

iii) $3x^2 - 6x + 2x^2 + 3 + 3x - 10$

21. A student subtracted like this:

$$(8x^2 - 3x + 7) - (5x^2 + 5x - 5)$$

$$= 8x^2 - 3x + 7 - 5x^2 + 5x - 5$$

$$= 8x^2 - 5x^2 - 3x + 5x + 7 - 5$$

$$= 3x^2 + 2x + 2$$

- Explain why the solution is incorrect.
- What is the correct answer? Show your work.

TASK 2: Review Polynomial Unit Test
Answer Section

MULTIPLE CHOICE

- 1. ANS: C
- 2. ANS: D
- 3. ANS: D
- 4. ANS: C
- 5. ANS: D
- 6. ANS: B
- 7. ANS: A
- 8. ANS: B
- 9. ANS: B
- 10. ANS: C
- 11. ANS: C
- 12. ANS: B

SHORT ANSWER

13. ANS:
Parts i and iv can be modelled by the same set of algebra tiles.
Parts ii and v can be modelled by the same set of algebra tiles.

14. ANS:
 $-x^2 + 1$

15. ANS:
 $(4x^2 + 10x) \div 2x = 2x + 5$

16. ANS:

Error:

-5 should be multiplied by $4x$ to give $-20x$.

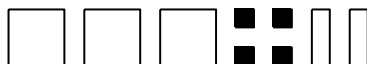
PROBLEM

17. ANS:

$$3x^2 - 7x + 10$$

18. ANS:

a) Variable: x ; degree: 2; number of terms: 3; coefficients: 3, 2; constant term: -4 .



b) $3x^2 + 2x - 4$; I know the polynomials are equivalent because they can be represented by the same algebra tiles.

19. ANS:

a) $2p^2 - 4p$

b) $6c$

20. ANS:

$$\begin{aligned}\text{i)} \quad & 3x^2 + 3x - 4 + 2x^2 - 6x - 3 \\ & = 3x^2 + 2x^2 + 3x - 6x - 4 - 3 \\ & = 5x^2 - 3x - 7\end{aligned}$$

$$\begin{aligned}\text{ii)} \quad & x^2 + 12 + 2x - 5 - 5x + 4x^2 \\ & = x^2 + 4x^2 + 2x - 5x + 12 - 5 \\ & = 5x^2 - 3x + 7\end{aligned}$$

$$\begin{aligned}\text{iii)} \quad & 3x^2 - 6x + 2x^2 + 3 + 3x - 10 \\ & = 3x^2 + 2x^2 - 6x + 3x + 3 - 10 \\ & = 5x^2 - 3x - 7\end{aligned}$$

Polynomials i and iii are equivalent because they are the same polynomial in simplified form.

21. ANS:

a) The student did not change the signs of $+5x$ and -5 after removing the second pair of brackets.

b) Correction:

$$\begin{aligned}& (8x^2 - 3x + 7) - (5x^2 + 5x - 5) \\ & = 8x^2 - 3x + 7 - 5x^2 - 5x + 5 \\ & = 8x^2 - 5x^2 - 3x - 5x + 7 + 5 \\ & = 3x^2 - 8x + 12\end{aligned}$$