Test- "Polynomials"

Algebra 1

Name: _____

Show your Work

1. Write the polynomial $-7 + 52x^4 + 17x^5 - 13x$ in descending order of the exponents. 1. _____

2. Evaluate $4a^3 + a^2 - 9a - 2$ when $a = 1/3$ 2. _____

3—4 Simplify.

3. $(9x^4 - 12x^3y + 3y^2) + (x^4 - 5x^3y + 14y^2)$ 3._____

4. $(7a^3 + 9b^2 - 9) - 4(3a^3 - 5b^2 + 8) + 9a^3$ 4. _____

5—8 Multiply and simplify.

5. $8x^2y(3x^3y - 7xy + 8y)$ 5. _____

6. (x + 7)(x - 9) 6. _____

7. $(3a - 2)^2$ 7 _____

8. $(2x - 5)(4x^2 + 6x - 3)$ 8. _____

9-10. Factor by finding the GCF.

9. $18y^3 - 27y^2$ 9. _____

10. $10a^6b^4c^3 - 15a^4b^2c^5 + 30a^3b^3c$ 10. _____

11-15. Factor each tririomial.

11. $x^2 + 15x + 14$ 11. _____

12. $x^2 + 4x - 12$ 12. _____

13. $x^2 - 12x - 45$ 13._____

14. $x^4 - 6x^2 - 72$ 14. _____

15. $5x^2$ + 38x - 16 15. _____

<u>16—18. Factor these “Special Case” Polynomials.</u>

16. $9x^2$ + 12x + 4 16._____

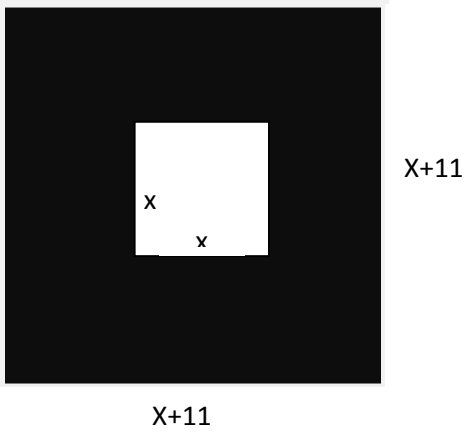
17. x^2 - 144 17._____

18. $x^2 - 64$ 18. _____

19. Find the perimeter.

19. _____

20. Find the area of the shaded region. 20._____



Test- "Polynomials"

Algebra 1

Name: _____

Show your Work

1. Write the polynomial $-7 + 52x^4 + 17x^5 - 13x$ in descending order of the exponents. 1. _____

(a) $52x^4 + 17x^5 - 13x - 7$ (b) $-7 - 13x + 52x^4 + 17x^5$
(c) $17x^5 + 52x^4 - 13x - 7$ (d) not listed

2. Evaluate $4a^3 + a^2 - 9a - 2$ when $a = 1/3$ 2. _____

(a) $-4\frac{20}{27}$ (b) $-2\frac{14}{27}$
(c) $10\frac{4}{27}$ (d) not listed

3—4 Simplify.

3. $(9x^4 - 12x^3y + 3y^2) + (x^4 - 5x^3y + 14y^2)$ 3._____

(a) $9x^4 - 17x^3y + 3y^2$ (b) $10x^8 - 17x^6y^2 + 17y^4$
(c) $10x^4 + x^3y$ (d) not listed

4. $(7a^3 + 9b^2 - 9) - 4(3a^3 - 5b^2 + 8) + 9a^3$ 4. _____

(a) $4a^3 + 29b^2 - 41$ (b) $28a^3 - 4b^2 + 23$
(c) $4a^3 - 4b^2 + 23$ (d) not listed

5—8 Multiply and simplify.

5. $8x^2y(3x^3y - 7xy + 8y)$ 5. _____

(a) $11x^5 - 15x^3y^2 + 16x^2y^2$ (b) $24x^6 - 56x^2y + 64x^2y$
(c) $24x^5 - 56x^3y^2 + 64x^2y^2$ (d) not listed

6. $(x + 7)(x - 9)$ 6. _____

(a) $x^2 - 63$ (b) $x^2 + 2x - 63$
(c) $x^2 - 2x + 63$ (d) not listed

7. $(3a - 2)^2$ 7 _____

(a) $9a^2 - 4$ (b)$9a^2 - 4a + 4$
(c) $9a^2 - 12a + 4$ (d) not listed

8. $(2x - 5)(4x^2 + 6x - 3)$ 8. _____

(a) $8x^3 - 8x^2 - 36x + 15$ (b) $8x^3 + 32x^2 + 24x + 15$
(c) $8x^3 - 32x^2 \mp 36x - 15$ (d) not listed

9-10. Factor by finding the GCF.

9. $18y^3 - 27y^2$ 9. _____

(a) $9(2y^3 - 3y^2)$ (b) $9y(2y^3 - 3y^2)$
(c) $9y^2(2y^3 - 3y^2)$ (d) not listed

10.$10a^6b^4c^3 - 15a^4b^2c^5 + 30a^3b^3c$ 10. _____

(a) $5(2a^6b^4c^3 - 3a^4b^2c^5 + 6a^3b^3c)$ (b)$15ab^5c^5$
(c) $5a^3b^2(2a^3b^2c^3 - 3ac^5 + 6bc)$ (d) not listed

11-15. Factor each tririomial.

11. $x^2 + 15x + 14$ 11. _____

(a) (x + 2)(x + 7) (b) (x + 1)(x + 14)
(c) (x + 1)(x + 15) (d) not listed

12. $x^2 + 4x - 12$ 12. _____

(a) (x + 2)(x +6) (b) (x - 2)(x + 6)
(c) (x + 2)(x - 6) (d) not listed

13. $x^2 - 12x - 45$ 13._____

(a) (x - 9)(x - 5) (b) (x + 3)(x - 15)
(c) (x - 3)(x + 15) (d) not listed

14. $x^4 - 6x^2 - 72$ 14. _____

(a) (x^2 - 12)(x^2 + 6) (b) (x^2 - 12x)(x^2 + 6x)
(c) (x^2 - 18)(x^2 + 4) (d) not listed

15. $5x^2$ + 38x - 16 15. _____

(a) (5x - 8)(x + 2) (b) (5x - 2)(x + 8)
(c) (5x - 1)(x + 16) (d) not listed

16—18. Factor these "Special Case" Polynomials.

16. $9x^2$ + 12x + 4 16._____

(a) (3x + 4)(3x + 4) (b) (3x + 2)(3x + 2)
(c) (9x + 2)(x + 2) (d) not listed

17. x^2 - 144 17._____

(a) (x + 12)(x - 12) (b) (x - 12)(x - 12)
(c) (x^2 - 12) (d) not listed

18. $x^2 - 64$ 18. _____

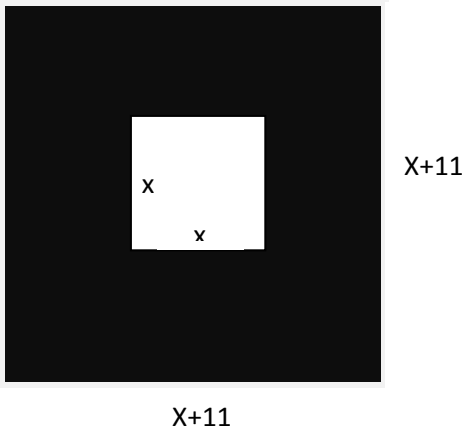
(a) $(x - 8)(x + 8)$ (b) $2(x^2 - 32)$
(c) $2(x - 4)(x + 4)$ (d) not listed

19. Find the perimeter. 19. _____

(a) $12x$ (b) $9x^2$
(b) $6x$ (d) $12x - 8$

20. Find the area of the shaded region. 20._____

(a) $x^2 + 121$ (b) 121
(c) $22x + 121$ (d) $2x^2 + 22x + 121$



Test- "Polynomials"

Algebra 1

Name: __**KEY**_____

Show your Work

1. Write the polynomial $-7 + 52x^4 + 17x^5 - 13x$ in descending order of the exponents. 1. _____

$17x^5 + 52x^4 - 13x - 7$

2. Evaluate $4a^3 + a^2 - 9a - 2$ when $a = 1/3$ 2. _____

$-4\frac{20}{27}$

3—4 Simplify.

3. $(9x^4 - 12x^3y + 3y^2) + (x^4 - 5x^3y + 14y^2)$ 3._____

$10x^4 - 17x^3y + 17y^2$

4. $(7a^3 + 9b^2 - 9) - 4(3a^3 - 5b^2 + 8) + 9a^3$ 4. _____

$4a^3 + 29b^2 - 41$

5—8 Multiply and simplify.

5. $8x^2y(3x^3y - 7xy + 8y)$ 5. _____

$24x^5y^2 - 56x^3y^2 + 64x^2y^2$

6. (x + 7)(x - 9) 6. _____

$x^2 - 2x + 63$

7. $(3a - 2)^2$ 7 _____

$9a^2 - 12a + 4$

8. $(2x - 5)(4x^2 + 6x - 3)$ 8. _____

$8x^3 - 8x^2 - 36x + 15$

9-10. Factor by finding the GCF.

9. $18y^3 - 27y^2$ 9. _____

$9y^2(2y^3 - 3y^2)$

10. $10a^6b^4c^3 - 15a^4b^2c^5 + 30a^3b^3c$ 10. _____

$5a^3b^2c(2a^3b^2c^2 - 3ac^4 + 6b)$

11-15. Factor each tririomial.

11. $x^2 + 15x + 14$ 11. _____

(x + 1)(x + 14)

12. $x^2 + 4x - 12$ 12. _____

(x - 2)(x + 6)

13. $x^2 - 12x - 45$ 13._____

(x + 3)(x - 15)

14. $x^4 - 6x^2 - 72$ 14. _____

(x^2 - 12)(x^2 + 6)

15. $5x^2$ + 38x - 16 15. _____

(5x - 2)(x + 8)

16—18. Factor these "Special Case" Polynomials.

16. $9x^2$ + 12x + 4 16._____

(3x + 2)(3x + 2)

17. x^2 - 144 17._____

(x + 12)(x - 12)

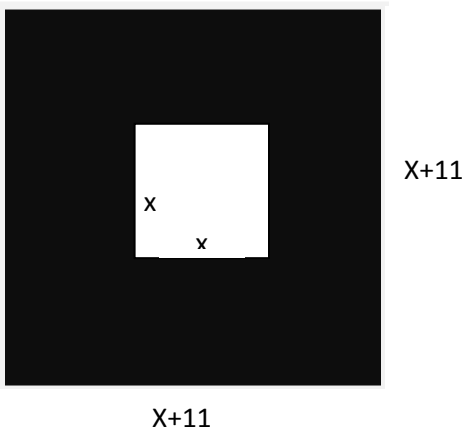
18. $x^2 - 64$ 18. _____

(x - 8)(x + 8)

19. Find the perimeter. 19. _____

12x

20. Find the area of the shaded region. 20._____



22x + 121

Test- "Polynomials"

Algebra 1

Name: **KEY**

Show your Work

1. Write the polynomial $-7 + 52x^4 + 17x^5 - 13x$ in descending order of the exponents. 1. **C**

(a) $52x^4 + 17x^5 - 13x - 7$ (b) $-7 - 13x + 52x^4 + 17x^5$
(c) $17x^5 + 52x^4 - 13x - 7$ (d) not listed

2. Evaluate $4a^3 + a^2 - 9a - 2$ when $a = 1/3$ 2. **A**

(a) $-4\frac{20}{27}$ (b) $-2\frac{14}{27}$
(c) $10\frac{4}{27}$ (d) not listed

3—4 Simplify.

3. $(9x^4 - 12x^3y + 3y^2) + (x^4 - 5x^3y + 14y^2)$ 3. **D**

(a) $9x^4 - 17x^3y + 3y^2$ (b) $10x^8 - 17x^6y^2 + 17y^4$
(c) $10x^4 + x^3y$ (d) not listed

4. $(7a^3 + 9b^2 - 9) - 4(3a^3 - 5b^2 + 8) + 9a^3$ 4. **A**

(a) $4a^3 + 29b^2 - 41$ (b) $28a^3 - 4b^2 + 23$
(c) $4a^3 - 4b^2 + 23$ (d) not listed

5—8 Multiply and simplify.

5. $8x^2y(3x^3y - 7xy + 8y)$ 5. **D**

(a) $11x^5 - 15x^3y^2 + 16x^2y^2$ (b) $24x^6 - 56x^2y + 64x^2y$
(c) $24x^5 - 56x^3y^2 + 64x^2y^2$ (d) not listed

6. $(x + 7)(x - 9)$ 6. **C**

(a) $x^2 - 63$ (b) $x^2 + 2x - 63$
(c) $x^2 - 2x + 63$ (d) not listed

7. $(3a - 2)^2$ 7 ___**C**___

(a) $9a^2 - 4$ (b)$9a^2 - 4a + 4$
(c) $9a^2 - 12a + 4$ (d) not listed

8. $(2x - 5)(4x^2 + 6x - 3)$ 8. ____**A**___

(a) $8x^3 - 8x^2 - 36x + 15$ (b) $8x^3 + 32x^2 + 24x + 15$
(c) $8x^3 - 32x^2 \mp 36x - 15$ (d) not listed

9-10. Factor by finding the GCF.

9. $18y^3 - 27y^2$ 9. ___**C**____

(a) $9(2y^3 - 3y^2)$ (b) $9y(2y^3 - 3y^2)$
(c) $9y^2(2y^3 - 3y^2)$ (d) not listed

10.$10a^6b^4c^3 - 15a^4b^2c^5 + 30a^3b^3c$ 10. ___**D**___

(a) $5(2a^6b^4c^3 - 3a^4b^2c^5 + 6a^3b^3c)$ (b)$15ab^5c^5$
(c) $5a^3b^2(2a^3b^2c^3 - 3ac^5 + 6bc)$ (d) not listed

11-15. Factor each tririomial.

11. $x^2 + 15x + 14$ 11. __**B**___

(a) (x + 2)(x + 7) (b) (x + 1)(x + 14)
(c) (x + 1)(x + 15) (d) not listed

12. $x^2 + 4x - 12$ 12. __B__

(a) (x + 2)(x +6) (b) (x - 2)(x + 6)
(c) (x + 2)(x - 6) (d) not listed

13. $x^2 - 12x - 45$ 13. __B__

(a) (x - 9)(x - 5) (b) (x + 3)(x - 15)
(c) (x - 3)(x + 15) (d) not listed

14. $x^4 - 6x^2 - 72$ 14. __A__

(a) (x^2 - 12)(x^2 + 6) (b) (x^2 - 12x)(x^2 + 6x)
(c) (x^2 - 18)(x^2 + 4) (d) not listed

15. $5x^2$ + 38x - 16 15. __B__

(a) (5x - 8)(x + 2) (b) (5x - 2)(x + 8)
(c) (5x - 1)(x + 16) (d) not listed

16—18. Factor these "Special Case" Polynomials.

16. $9x^2$ + 12x + 4 16. __B__

(a) (3x + 4)(3x + 4) (b) (3x + 2)(3x + 2)
(c) (9x + 2)(x + 2) (d) not listed

17. x^2 - 144 17. __A__

(a) (x + 12)(x - 12) (b) (x - 12)(x - 12)
(c) (x^2 - 12) (d) not listed

18. $x^2 - 64$ 18. ___**A**___

(a) $(x - 8)(x + 8)$ (b) $2(x^2 - 32)$
(c) $2(x - 4)(x + 4)$ (d) not listed

19. Find the perimeter.

19. ___**A**___

(b) $12x$ (b) $9x^2$
(b) $6x$ (d) $12x - 8$

20. Find the area of the shaded region. 20.___**C**___

(a) $x^2 + 121$ (b) 121
(c) $22x + 121$ (d) $2x^2 + 22x + 121$