

BADAA AL MUTAWA SCHOOL

MATHEMATICS — MULTIPLE-CHOICE ASSESSMENT

Student Name: _____

Grade: _____

Date: _____

Subject: Mathematics

Subject Teacher: Abdulkader Amro

Total Questions: 36

Choose the one correct answer for each question.

SECTION 1 • APPLICATIONS & POLYNOMIAL MODELS

14. The Loft Theater has a center seating section with $3c + 8$ rows and $4c - 1$ seats in each row. Write an expression for the total number of seats in the center section.

A. $12c^2 + 29c + 8$

B. $12c^2 + 29c - 8$

C. $12c^2 + 5c - 8$

D. $7c^2 + 29c - 8$

15. Suppose a rectangular quilt made up of squares has a length-to-width ratio of 5 to 4. The length of the quilt is $5x$ inches. The quilt can be made slightly larger by adding a border of 1-inch squares all the way around the perimeter of the quilt. Write a polynomial expression for the area of the larger quilt.

A. $20x^2 + 9x + 4$

B. $20x^2 + 18x + 4$

C. $20x^2 + 10x + 1$

D. $16x^2 + 18x + 4$

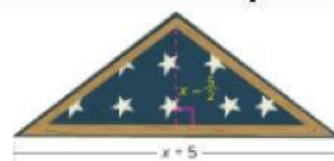
16. A United States flag is sometimes folded into a triangle shape and displayed in a triangular display case. If a display case has dimensions shown in inches, write a polynomial expression that represents the area of wall space covered by the display case.

A. $(2x^2 + 5x - 25)/4$

B. $(x^2 + 5x - 25)/2$

C. $(x^2 + 5x - 25)/4$

D. $(2x^2 + 10x - 25)/4$



17. Think of a whole number. Subtract 2. Write down this number. Take the original number and add 2. Write down this number. Find the product of the numbers you wrote down. Subtract the square of the original number. The result is always -4 . Use polynomials to show how this number trick works.

A. $(n + 2)^2 - n^2 = -4$

B. $(n - 2)^2 - n^2 = -4$

C. $(n - 2)(n + 2) - n^2 = -4$

D. $(n - 2)(n + 2) + n^2 = -4$

SECTION 2 • FIND EACH PRODUCT

24. Find the product: $(m + 4)(m + 1)$

A. $m^2 + 3m + 4$

B. $m^2 + 5m - 4$

C. $m^2 + 5m + 4$

D. $m^2 + 4m + 1$

25. Find the product: $(x + 2)(x + 2)$

A. $x^2 + 4$

B. $x^2 + 2x + 4$

C. $x^2 + 4x + 4$

D. $x^2 + 2x + 2$

26. Find the product: $(b + 3)(b + 4)$

A. $b^2 + b + 12$

B. $b^2 + 7b - 12$

C. $b^2 + 7b + 12$

D. $b^2 + 12b + 7$

27. Find the product: $(t + 4)(t - 3)$

A. $t^2 + t + 12$

B. $t^2 + 7t - 12$

C. $t^2 - t - 12$

D. $t^2 + t - 12$

28. Find the product: $(r + 1)(r - 2)$

A. $r^2 - r - 2$

B. $r^2 - 3r + 2$

C. $r^2 + r - 2$

D. $r^2 + 3r - 2$

29. Find the product: $(n - 5)(n + 1)$

A. $n^2 + 4n - 5$

B. $n^2 - 4n - 5$

C. $n^2 - 4n + 5$

D. $n^2 - 6n - 5$

30. Find the product: $(3c + 1)(c - 2)$

A. $3c^2 + 5c - 2$

B. $3c^2 - 6c + 1$

C. $3c^2 - c - 2$

D. $3c^2 - 5c - 2$

31. Find the product: $(2x - 6)(x + 3)$

A. $2x^2 - 12x - 18$

B. $2x^2 + 12x - 18$

C. $2x^2 - 18x$

D. $2x^2 - 18$

32. Find the product: $(d - 1)(5d - 4)$

A. $5d^2 + 9d + 4$

B. $5d^2 - 4d + 1$

C. $5d^2 - 9d + 4$

D. $5d^2 - 9d - 4$

33. Find the product: $(2\ell + 5)(\ell - 4)$

A. $2\ell^2 - 8\ell + 20$

B. $2\ell^2 + 3\ell - 20$

C. $2\ell^2 - 3\ell + 20$

D. $2\ell^2 - 3\ell - 20$

34. Find the product: $(3n - 7)(n + 3)$

A. $3n^2 + 16n - 21$

B. $3n^2 - 2n - 21$

C. $3n^2 + 2n + 21$

D. $3n^2 + 2n - 21$

35. Find the product: $(q + 5)(5q - 1)$

A. $5q^2 - 24q - 5$

B. $5q^2 + 24q - 5$

C. $5q^2 + 24q + 5$

D. $5q^2 + 26q - 5$

36. Find the product: $(3b + 3)(3b - 2)$

A. $9b^2 - 3b - 6$

B. $9b^2 + 3b + 6$

C. $9b^2 + 3b - 6$

D. $9b^2 + 6b - 6$

37. Find the product: $(2m + 2)(3m - 3)$

A. $6m^2 - 6$

B. $6m^2 + 6$

C. $6m^2 - 12m - 6$

D. $6m^2 - 6m - 6$

38. Find the product: $(4c + 1)(2c + 1)$

A. $8c^2 + 2c + 1$

B. $8c^2 + 5c + 1$

C. $8c^2 + 6c + 1$

D. $8c^2 - 6c + 1$

39. Find the product: $(5a - 2)(2a - 3)$

A. $10a^2 - 15a + 6$

B. $10a^2 - 19a + 6$

C. $10a^2 + 19a + 6$

D. $10a^2 - 19a - 6$

40. Find the product: $(4h - 2)(4h - 1)$

A. $16h^2 - 12h + 2$

B. $16h^2 - 12h - 2$

C. $16h^2 + 12h + 2$

D. $16h^2 - 6h + 2$

41. Find the product: $(x - y)(2x - y)$

A. $2x^2 - 3xy + y^2$

B. $2x^2 - xy + y^2$

C. $2x^2 + 3xy + y^2$

D. $2x^2 - 3xy - y^2$

42. Find the product: $(w + 4)(w^2 + 3w - 6)$

A. $w^3 + 7w^2 + 6w + 24$

B. $w^3 + 7w^2 - 6w - 24$

C. $w^3 + 7w^2 + 6w - 24$

D. $w^3 + 3w^2 + 6w - 24$

43. Find the product: $(t + 1)(t^2 + 2t + 4)$

A. $t^3 + 3t^2 - 6t + 4$

B. $t^3 + 3t^2 + 4t + 6$

C. $t^3 + 2t^2 + 4t + 1$

D. $t^3 + 3t^2 + 6t + 4$

44. Find the product: $(k - 4)(k^2 + 5k - 2)$

A. $k^3 + 9k^2 - 22k + 8$

B. $k^3 - k^2 - 22k + 8$

C. $k^3 + k^2 - 22k + 8$

D. $k^3 + k^2 + 22k - 8$

45. Find the product: $(m + 3)(m^2 + 3m + 5)$

A. $m^3 + 6m^2 + 14m + 15$

B. $m^3 + 3m^2 + 14m + 15$

C. $m^3 + 6m^2 + 14m - 15$

D. $m^3 + 6m^2 + 8m + 15$

46. Find the product: $(2x + 1)(x^2 - 3x - 4)$

A. $2x^3 - 5x^2 - 8x - 4$

B. $2x^3 - 6x^2 - 8x - 4$

C. $2x^3 - 5x^2 - 11x - 4$

D. $2x^3 + 5x^2 - 11x - 4$

47. Find the product: $(3b + 4)(2b^2 - b + 4)$

A. $6b^3 - 5b^2 + 8b + 16$

B. $6b^3 + 8b^2 + 5b + 16$

C. $6b^3 + 5b^2 + 8b + 16$

D. $6b^3 + 5b^2 - 8b + 16$

SECTION 3 • SIMPLIFY & SPECIAL PRODUCTS

48. Simplify: $(m + 2)[(m^2 + 3m - 6) + (m^2 - 2m + 4)]$

A. $2m^3 + m^2 - 4$

B. $2m^3 + 5m^2 + 4$

C. $2m^3 + 5m^2 - 2m - 4$

D. $2m^3 + 5m^2 - 4$

49. Simplify: $[(t^2 + 3t - 8) - (t^2 - 2t + 6)](t - 4)$

A. $5t^2 - 26t + 56$

B. $5t^2 - 34t + 56$

C. $5t^2 - 14t + 24$

D. $5t^2 - 34t - 56$

50. Find the product: $(a - 2b)^2$

A. $a^2 - 4ab - 4b^2$

B. $a^2 - 2ab + 4b^2$

C. $a^2 + 4ab + 4b^2$

D. $a^2 - 4ab + 4b^2$

51. Find the product: $(3c + 4d)^2$

A. $9c^2 + 24cd + 8d^2$

B. $9c^2 - 24cd + 16d^2$

C. $9c^2 + 24cd + 16d^2$

D. $9c^2 + 12cd + 16d^2$

52. Find the product: $(x - 5y)^2$

A. $x^2 - 10xy - 25y^2$

B. $x^2 - 5xy + 25y^2$

C. $x^2 + 10xy + 25y^2$

D. $x^2 - 10xy + 25y^2$

53. Find the product: $(2r - 3t)^3$

A. $8r^3 + 36r^2t + 54rt^2 + 27t^3$

B. $8r^3 - 18r^2t + 27rt^2 - 27t^3$

C. $8r^3 - 36r^2t - 54rt^2 - 27t^3$

D. $8r^3 - 36r^2t + 54rt^2 - 27t^3$

54. Find the product: $(5g + 2h)^3$

A. $125g^3 + 150g^2h + 60gh^2 + 8h^3$

B. $125g^3 + 150g^2h + 30gh^2 + 8h^3$

C. $125g^3 - 150g^2h + 60gh^2 + 8h^3$

D. $125g^3 + 100g^2h + 40gh^2 + 8h^3$

55. Find the product: $(4y + 3z)(4y - 3z)^2$

A. $64y^3 - 48y^2z - 36yz^2 + 27z^3$

B. $64y^3 + 48y^2z - 36yz^2 + 27z^3$

C. $64y^3 - 48y^2z + 36yz^2 - 27z^3$

D. $64y^3 - 96y^2z + 36yz^2 + 27z^3$