اختبار تدريبي وزاري (نموذج 1 من 5) ريفيل



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	إعداد: Saad Sahar

التواصل الاجتماعي بحسب الصف التاسع					
صفحة المناهج الإماراتية على فيسبوك					

المزيد من الملفات بحسب الصف التاسع والمادة رياضيات في الفصل الأول	
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Miss Sahar Saad Academy 0581474959

Grade 9 Reveal Math – Term 1 Ministerial Exam Practice (Model 1 of 5)

Aligned with UAE Ministry of Education Structure (2026–2027) | 25 Learning Outcomes

Part 1: Multiple Choice (Q1 – Q20) | Part 2: Free Response (Q21 – Q25)

Student Name: _____	Grade / Sec: 9 / _____	Date: ___ / ___ / 2026

PART 1: MULTIPLE CHOICE QUESTIONS (Questions 1 – 20)

Q1. [LO 1 (Lesson 2-3): Solve equations involving more than one operation]

Solve the equation: (3/4)x − 9 = −21

A) x = −16

B) x = 16

C) x = −9

D) x = −40

Q2. [LO 2 (Lesson 2-1): Translate sentences into equations]

Translate into an equation: "Fourteen less than five times the difference of a number n and 3 is equal to twice the sum of n and 9."

A) 5(3 − n) − 14 = 2(n + 9)

B) 5n − 14 = 2n + 9

C) 14 − 5(n − 3) = 2(n + 9)

D) 5(n − 3) − 14 = 2(n + 9)

Q3. [LO 3 (Lesson 2-4): Solve equations with the variable on each side]

Solve the equation: (5x − 7)/4 = (2x + 11)/3

A) x = 23/7

B) x = 9

C) x = −23/7

D) x = 65/7

Q4. [LO 4 (Lesson 2-5): Solve absolute value equations]

A precision machine cuts steel rods to a target length of 48.5 cm with a tolerance of ±0.35 cm. Which equation and range represent the acceptable lengths L?

A) |L − 48.5| = 0.70; 47.80 cm to 49.20 cm

B) |L − 48.5| = 0.35; 48.15 cm to 48.85 cm

C) |L − 0.35| = 48.5; 48.15 cm to 48.50 cm

D) |L + 48.5| = 0.35; 48.15 cm to 48.85 cm

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Q5. [LO 5 (Lesson 4-2): Find the slope of a line]

Find the slope of the line passing through the points (−7, 13) and (5, −11).

A) m = −1/6 **B)** m = −1/2

C) m = −2 **D)** m = 2

Q6. [LO 6 (Lesson 2-6): Solve proportions]

Solve the proportion: (3k − 5)/8 = (5k + 3)/12

A) k = 21 **B)** k = −21

C) k = −3/2 **D)** k = −9

Q7. [LO 7 (Lesson 4-3): Graph and interpret linear functions]

A cloud storage service charges a $18.50 setup fee plus $4.25 per terabyte t of storage. Which equation models the total cost C, and what is the cost for 6 terabytes?

A) C = 22.75t; $136.50 **B)** C = 4.25t + 18.50; $44.00

C) C = 18.50t + 4.25; $115.25 **D)** C = 4.25t − 18.50; $7.00

Q8. [LO 8 (Lesson 4-7): Apply translations to absolute value functions]

Describe the translation of g(x) = |x + 9| − 6 compared to the parent function f(x) = |x|.

A) 6 units left and 9 units down **B)** 9 units left and 6 units up

C) 9 units right and 6 units down **D)** 9 units left and 6 units down

Q9. [LO 9 (Lesson 6-1): Graph the solutions of an inequality]

A number line has a closed circle at −4 and is shaded to the right. Which inequality represents this graph?

A) x ≥ −4 **B)** x > −4

C) x < −4 **D)** x ≤ −4

Q10. [LO 10 (Lesson 4-5): Construct arithmetic sequences]

Determine whether the sequence −14.5, −10.2, −5.9, −1.6, ... is arithmetic. If so, find the common difference d.

A) Yes; d = 4.3 **B)** Yes; d = 3.7

C) No; the differences are not equal **D)** Yes; d = −4.3

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Q11. [LO 11 (Lesson 6-2): Solve linear inequalities involving more than one operation]

Solve the inequality: $-4(3x - 5) + 7 \geq 5(2 - x) - 11$

A) $x \geq 4$ **B)** $x \leq 4$

C) $x \leq -4$ **D)** $x \geq -4$

Q12. [LO 12 (Lesson 6-4): Solve and graph absolute value inequalities (<)]

Solve the inequality: $|4x - 7| + 3 < 16$

A) $x < -1.5$ or $x > 5$ **B)** $-5 < x < 1.5$

C) $-2.25 < x < 5.75$ **D)** $-1.5 < x < 5$

Q13. [LO 13 (Lesson 4-4): Apply dilations to linear functions]

Describe the dilation in $g(x) = f((2/5)x)$ as it relates to the parent function $f(x) = x$.

A) Stretched horizontally **B)** Compressed horizontally

C) Translated 2/5 units right **D)** Compressed vertically

Q14. [LO 14 (Lesson 5-2): Write equations of lines in point-slope form given two points]

Write an equation in point-slope form for the line passing through $(-6, 14)$ and $(3, -13)$.

A) $y - 14 = 3(x + 6)$ **B)** $y + 13 = -(1/3)(x - 3)$

C) $y + 13 = -3(x - 3)$ **D)** $y - 13 = -3(x + 3)$

Q15. [LO 15 (Lesson 5-2): Create and identify equations of parallel or perpendicular lines]

Write an equation in slope-intercept form for the line passing through $(8, -3)$ that is perpendicular to $4x - 3y = 18$.

A) $y = -(3/4)x + 3$ **B)** $y = (3/4)x - 9$

C) $y = -(3/4)x - 9$ **D)** $y = (4/3)x - 41/3$

Q16. [LO 16 (Lesson 5-6): Construct the inverses of relations]

Find the inverse of the relation: $\{(-8, 15), (-3, 7), (2, -1), (9, -12)\}$

A) $\{(8, -15), (3, -7), (-2, 1), (-9, 12)\}$ **B)** $\{(-15, 8), (-7, 3), (1, -2), (12, -9)\}$

C) $\{(15, -8), (7, -3), (-1, 2), (-12, 9)\}$ **D)** $\{(-8, -15), (-3, -7), (2, 1), (9, 12)\}$

Q17. [LO 17 (Lesson 4-6): Identify and graph piecewise-defined functions]

Given $f(x) = \{ 3x - 5$ if $x < -2$; $-2x + 4$ if $x \geq -2 \}$, evaluate $f(-2) + f(3)$.

A) 10 **B)** −9

C) −13 **D)** 6

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Q18. [LO 18 (Lesson 4-6): Identify and graph step functions]

For the step function g(x) = [[x − 3]] + 2, find g(−1.4).

A) −1 **B)** −3

C) −4 **D)** −2

Q19. [LO 19 (Lesson 4-7): Graph absolute value functions]

An absolute value function has its vertex at (−5, 7) and opens upward with a = 1. Which equation represents this function?

A) g(x) = |x − 5| − 7 **B)** g(x) = |x − 5| + 7

C) g(x) = |x + 5| + 7 **D)** g(x) = |x + 7| − 5

Q20. [LO 20 (Lesson 5-1): Write an equation of a line in slope-intercept form given the slope and one point]

Write an equation in slope-intercept form for the line passing through (−12, 7) with slope −3/4.

A) y = −(3/4)x + 16 **B)** y = (3/4)x + 16

C) y = −(3/4)x − 2 **D)** y = −(4/3)x − 9

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PART 2: FREE RESPONSE QUESTIONS (Questions 21 – 25) — Show All Work

Q21. [LO 21 (Lessons 6-3 & 2-4): Compound Inequalities ('and') & Distributive Property]

Part A: Solve the compound inequality and describe its graph on a number line:

$-11 < 3(2x - 1) + 4 \leq 19$

Part B: Solve the equation by applying the Distributive Property:

$4(3y - 5) - 2(y + 7) = 3(2y - 6)$

Solution Space:

Q22. [LO 22 (Lesson 4-1): Graph Linear Functions Using x- and y-Intercepts]

Find the x-intercept and y-intercept of the linear equation $5x - 4y = 20$. Write both intercepts as ordered pairs and explain how to graph the line.

Solution Space:

Q23. [LO 23 (Lesson 5-2): Create and Identify Equations of Parallel or Perpendicular Lines]

Line L1 passes through the points $(-4, 9)$ and $(2, -3)$. Line L2 is represented by the equation $2x - 4y = 12$.

Part A: Determine whether L1 and L2 are parallel, perpendicular, or neither. Show all slope calculations.

Part B: Write the equation in slope-intercept form of a line L3 that passes through $(6, -5)$ and is perpendicular to L1.

Solution Space:

Q24. [LO 24 (Lesson 4-5): Apply the Arithmetic Sequence Formula]

An auditorium has 28 seats in the first row, 33 seats in the second row, 38 seats in the third row, and continues in this arithmetic pattern for 30 rows.

Part A: Write an explicit formula a_n for the number of seats in row n (in simplified form).

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Part B: How many seats are in the 24th row?

Part C: Which row has exactly 118 seats?

Solution Space:

Q25. [LO 25 (Lesson 2-7): Solve Equations for Specific Variables]

A catering company calculates total cost using the formula T = 18.50a + 12.25c + 45, where a is the number of adult meals, c is the number of child meals, and $45 is the delivery fee.

Part A: Solve the formula for a.

Part B: If a customer has a budget of $340 and orders 8 child meals, what is the maximum whole number of adult meals they can order?

Solution Space:

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ANSWER KEY & MODEL SOLUTIONS — MODEL 1

Q#	Correct Answer	Step-by-Step Solution
Q1	A) x = −16	Add 9 to both sides: (3/4)x = −12. Multiply by 4/3: x = −16.
Q2	D) 5(n − 3) − 14 = 2(n + 9)	'Fourteen less than' means subtract 14 from 5(n − 3): 5(n − 3) − 14 = 2(n + 9).
Q3	D) x = 65/7	Cross-multiply: 3(5x − 7) = 4(2x + 11) → 15x − 21 = 8x + 44 → 7x = 65 → x = 65/7.
Q4	B) |L − 48.5| = 0.35; 48.15 cm to 48.85 cm	|L − 48.5| = 0.35 gives L − 48.5 = ±0.35, so L = 48.15 cm and L = 48.85 cm.
Q5	C) m = −2	m = (−11 − 13) / (5 − (−7)) = −24 / 12 = −2.
Q6	B) k = −21	Cross-multiply: 12(3k − 5) = 8(5k + 3) → 36k − 60 = 40k + 24 → −4k = 84 → k = −21.
Q7	B) C = 4.25t + 18.50; $44.00	C(6) = 4.25(6) + 18.50 = 25.50 + 18.50 = $44.00.
Q8	D) 9 units left and 6 units down	h = −9 (9 units left), k = −6 (6 units down).
Q9	A) x ≥ −4	Closed circle means inclusive (≤ or ≥); shaded right means greater than: x ≥ −4.
Q10	A) Yes; d = 4.3	−10.2 − (−14.5) = 4.3; −5.9 − (−10.2) = 4.3; −1.6 − (−5.9) = 4.3.
Q11	B) x ≤ 4	−12x + 27 ≥ 10 − 5x − 11 → −12x + 27 ≥ −5x − 1 → 28 ≥ 7x → x ≤ 4.
Q12	D) −1.5 < x < 5	|4x − 7| < 13 → −13 < 4x − 7 < 13 → −6 < 4x < 20 → −1.5 < x < 5.
Q13	A) Stretched horizontally	Inside factor a = 2/5 where 0 < |a| < 1 stretches horizontally.
Q14	C) y + 13 = −3(x − 3)	m = (−13 − 14) / (3 − (−6)) = −27/9 = −3. Using (3, −13): y + 13 = −3(x − 3).
Q15	A) y = −(3/4)x + 3	Given slope = 4/3 → perpendicular slope = −3/4. −3 = (−3/4)(8) + b → −3 = −6 + b → b = 3.
Q16	C) {(15, −8), (7, −3), (−1, 2), (−12, 9)}	Swap x and y coordinates in each ordered pair.
Q17	D) 6	f(−2) = −2(−2) + 4 = 8; f(3) = −2(3) + 4 = −2; sum = 8 +

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		(−2) = 6.
Q18	B) −3	[[−1.4 − 3]] + 2 = [[−4.4]] + 2 = −5 + 2 = −3.
Q19	C) g(x) = |x + 5| + 7	Vertex (h, k) = (−5, 7) → g(x) = |x − (−5)| + 7 = |x + 5| + 7.
Q20	C) y = −(3/4)x − 2	7 = (−3/4)(−12) + b → 7 = 9 + b → b = −2 → y = −(3/4)x − 2.

Part 2: Free Response Model Solutions

Q21 [LO 21 (Lessons 6-3 & 2-4): Compound Inequalities ('and') & Distributive Property]:

Part A: −11 < 6x + 1 ≤ 19 → −12 < 6x ≤ 18 → −2 < x ≤ 3 (open circle at −2, closed circle at 3, shaded between).

Part B: 12y − 20 − 2y − 14 = 6y − 18 → 10y − 34 = 6y − 18 → 4y = 16 → y = 4.

Q22 [LO 22 (Lesson 4-1): Graph Linear Functions Using x- and y-Intercepts]:

x-intercept (set y = 0): 5x = 20 → x = 4, point (4, 0).

y-intercept (set x = 0): −4y = 20 → y = −5, point (0, −5).

Plot (4, 0) on the x-axis and (0, −5) on the y-axis, then draw a straight line through both points.

Q23 [LO 23 (Lesson 5-2): Create and Identify Equations of Parallel or Perpendicular Lines]:

Part A: Slope of L1: m1 = (−3 − 9)/(2 − (−4)) = −12/6 = −2. Rewrite L2: −4y = −2x + 12 → y = (1/2)x − 3, so m2 = 1/2. Since m1 · m2 = (−2)(1/2) = −1, L1 and L2 are perpendicular.

Part B: Perpendicular to L1 has slope m3 = 1/2. Using (6, −5): −5 = (1/2)(6) + b → −5 = 3 + b → b = −8 → y = (1/2)x − 8.

Q24 [LO 24 (Lesson 4-5): Apply the Arithmetic Sequence Formula]:

Part A: $a_1 = 28$, d = 5 → $a_n = 28 + (n − 1)(5) = 5n + 23$.

Part B: $a_{24} = 5(24) + 23 = 120 + 23 = 143$ seats.

Part C: 5n + 23 = 118 → 5n = 95 → n = 19 (19th row).

Q25 [LO 25 (Lesson 2-7): Solve Equations for Specific Variables]:

Part A: T − 45 − 12.25c = 18.50a → a = (T − 12.25c − 45) / 18.50.

Part B: a = (340 − 12.25(8) − 45) / 18.50 = (340 − 98 − 45) / 18.50 = 197 / 18.50 ≈ 10.65 → Maximum 10 adult meals.

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