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MARKING GUIDELINE

MATHEMATICS CLASS TEST: 12 April 2024

GRADE 9

MARKS: 5

1.	Which of the following expressions is a polynomial?	
Options	Possible Answers	Errors and Misconception
A.	$x^2 + 4\sqrt{x} - 7$	No understanding that the exponent must be an integer
B.	$x^2 + \frac{x+1}{4} - 7$	✓ Correct answer
C.	$\frac{4}{x+1} - \frac{1}{x^2} - 7$	No understanding that the denominator must be an integer
D.	$\frac{x+1}{4} - \sqrt{x} - 7$	No understanding that the exponent must be an integer
2.	Simplify $(3x)^3 + 2x^3$ $= 27x^3 + 2x^3$ $= 29x^3$ ✓	
Options	Possible Answers	Errors and Misconception
A.	$11x^3$	Multiplying the exponent 3 and coefficient in the first term to get $9x^3$, i.e. $(3x)^3 = 9x^3$
B.	$27x^3$	Simplifying only the first term, leaving out the second term
C.	$5x^3$	Regarded first term as $3x^3$ then added correctly
D.	$29x^3$ ✓	✓ Correct answer



3.	Subtract $a(a - b)$ from $4a$ $4a - a(a - b) = 4a - a^2 + ab) \checkmark$	
Options	Possible Answers	Errors and Misconception
A.	$3a^2 + ab$	Removed the brackets correctly to get $4a - a^2 + ab$ but treated $4a$ and $-a$ as like terms to get $a^2 + ab$
B.	$3a^2 - 3ab$	Calculated the $4a - a$ to give $3a$ first, before removing the brackets
C.	$4a - a^2 - ab$	Started correctly by removing the brackets, however there is a mistake of the sign for $-a \times -b$ being $-ab$ instead of $+ab$
D.	$4a - a^2 + ab \checkmark$	$\checkmark$ Correct answer
4.	What is $\sqrt{16x^{16} + 9x^{16}}$?	
Options	Possible Answers	Errors and Misconception
A.	$7x^8$	Determined the square root of each term.
B.	$7x^4$	Treated the terms separately and determined square root of exponent as 4
C.	$5x^8$	$\checkmark$ Correct answer
D.	$5x^4$	Correctly added the terms, but determined square root of exponent as 4
5.	What is $\frac{12x^2y - 6xy^2}{3xy}$ when simplified?	
Options	Possible Answers	Errors and Misconception
A.	$4x - 2y$	$\checkmark$ Correct answer
B.	$9x - 3y$	Applied the laws of exponents even to coefficient by subtracting 3 from 12 and 6
C.	$6xy$	Incorrectly added the terms to get $18x^2y^2$ and divided by $3xy$
D.	$2xy$	Subtracted the terms to get $6x^2y^2$ and divided by $3xy$

