Linear Relations and Equations

Name: Answers

7 8 9 10 **11** 12

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Question: 1

Which one of the following is not a linear equation?

a) $y = 2x + 7$

b) $xy + 7 = 0$

c) $2x + y = 7$

d) $2x - y = 7$

e) $4x - 2y + 6 = 0$

Question: 2

What is the common difference in the number pattern: 2.4, 3.8, 5.2, 6.6, 8.0 …

1.4

Question: 3

Given $y = \frac{2x-1}{3}$, determine the value for x when $y = 7$

x = 11

Question: 4

To make F the subject of the equation in: $C = \frac{5(F-32)}{9}$, the first logical step could be:

a) Add 5 to both sides of the equation

b) Multiply both sides of the equation by 5

c) Add 32 to both sides of the equation

d) Multiply both sides of the equation by 9

e) Subtract 32 from both sides of the equation

Question: 5

A linear recurrence relation is given by the formula: $t_n = t_{n-1} + 1.5$, $t_1 = 1.2$.

The fifth term of the sequence would be:

a) -0.3 b) 1.7 c) 2.7 d) 7.2 e) 8.7

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Question: 6

Alex has $120.00 in his account. He is saving up for a Lego™ model and decides to save $30.00 per week. Where b_n represents the balance in his account and n is the number of weeks, the recurrence relation for Alex's balance could be written as:

a) $b_n = 120 + 30b_{n-1},\ b_1 = 120$

b) $b_n = 30 + b_{n-1},\ b_0 = 120$

c) $b_n = 120 + b_{n-1},\ b_0 = 30$

d) $b_n = 30b_{n-1},\ b_0 = 120$

e) $b_n = 120b_{n-1},\ b_0 = 30$

Question: 7

Given Eqn1 : $3x - 2y = 12$ and Eqn2 : $4x + 3y = 24$ then $3 \times \text{Eqn1} + 2 \times \text{Eqn2} =$

a) $7x = 36$ b) $17x = 36$ c) $7x = 84$ d) $17x = 84$ e) $17x - 12y = 84$

Question: 8

Given Eqn1 : $5x - 2y = 7$ and Eqn2 : $y = 3 - 2x$ when Eqn2 is substituted into Eqn1 the result is:

a) $9x - 6 = 7$ b) $x - 6 = 7$ c) $7x - 3 = 7$ d) $7x - 6 = 7$ e) $3x - 6 = 7$

Question: 9

Which pair of simultaneous equations intersects at the point (2, 3)?

a) $2x + 3y = 12$, $3x + 2y = 24$ b) $2x - 3y = 1$, $3x + 2y = 12$ c) $5x - 3y = 1$, $7x - 2y = 8$ d) $y = 2x - 1$, $x = 2y + 1$ e) $3x + 2y = 12$, $y = x - 1$

Question: 10

Renee spends $58.80 on 4 Large and 3 Medium pizzas. Emily spends $51.80 on 2 Large and 5 Medium pizzas. What is the cost of a Large pizza?

$4L + 3M = 58.8$ ... Eqn1

$2L + 5M = 51.80$ ... Eqn2

$3 \times \text{Eqn2} - 5 \times \text{Eqn1}$

$14L = 138.60$

$L = 9.90$

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