Math 10C | Make it click.

A short practice set on polynomials and linear relations. Show your steps. This is a focused sample, not a full-course assessment.

Name: _____ Date: _____

01

Simplify:
$3x + 5 - 2x + 7$

02

Expand and simplify:
$(x + 4)(x - 3)$

03

Factor completely:
$x^2 + 7x + 12$

04

Factor completely:
$6x^2 + 9x$

05

Find the slope of the line through A(-2, 1) and B(4, 13).

06

Find the equation of a line with slope 2 that passes through (3, 1). Write it as $y = mx + b$.

07

Solve the system and check:
$2x + y = 11$
$x - y = 1$

08

A recreation program charges $18 plus $4 per visit. Write C(n), find the cost of 6 visits, and find n when C = $66.

Check the thinking.

Compare the method as well as the final answer. Revisit any question where a step was unclear.

01

x + 12
Collect like terms:
(3x - 2x) + (5 + 7) = x + 12.

02

x^2 + x - 12
x^2 - 3x + 4x - 12
= x^2 + x - 12.

03

(x + 3)(x + 4)
3 and 4 multiply to 12 and add to 7. Expand to check.

04

3x(2x + 3)
The greatest common factor is 3x. Divide each term by 3x.

05

m = 2
m = (13 - 1) / (4 - (-2))
= 12 / 6 = 2.

06

y = 2x - 5
Substitute (3, 1) into y = 2x + b:
1 = 6 + b, so b = -5.

07

x = 4, y = 3
Add equations: 3x = 12, so x = 4.
Then 4 - y = 1 gives y = 3.
Check: 2(4) + 3 = 11; 4 - 3 = 1.

08

C(n) = 18 + 4n, n = 0, 1, 2, ...
C(6) = 18 + 24 = $42.
66 = 18 + 4n gives n = 12 visits.

Original NMA questions. Topic reference: Alberta Math 10C curriculum - polynomials and linear relations.