Linear equations: 10 practice questions

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Name: _____ Date: _____

Attempt all questions and show your working. Suggested time: 15 to 20 minutes.

Section A: Consolidating (Questions 1-4)

Question 1

Solve:

(a) x + 9 = 15

(b) 4x = 28

(c) x/5 = 3

(d) x - 8 = -2

Question 2

Solve:

(a) 3x + 5 = 20

(b) 2x - 7 = 11

(c) x/4 + 3 = 8

Question 3

Is x = 4 a solution of 5x - 3 = 2x + 9? Show how you know.

Question 4

I think of a number, multiply it by 6 and then subtract 4. The answer is 32.

(a) Write an equation, using n for the number.

(b) Solve the equation to find the number.

Section B: Standard (Questions 5-10)

Question 5

Solve:

(a) 3(x + 4) = 27

(b) 5(2x - 1) = 35

(c) -2(x - 6) = 10

Question 6

Solve:

(a) 7x - 4 = 3x + 16

(b) 2(x + 3) = 5x - 12

(c) 4 - x = 2x + 19

Question 7

Solve:

(a) (x + 3)/(4) = 5

(b) (2x - 1)/(3) = (x + 4)/(2)

(c) x/2 + x/3 = 10

Question 8

(a) Use the formula v = u + at to find t when v = 25, u = 5 and a = 4.

(b) Use the formula P = 2(l + w) to find w when P = 46 and l = 15.

Question 9

The formula F = 1.8C + 32 converts a temperature in degrees Celsius, C, to degrees Fahrenheit, F.

(a) Find C when F = 104.

(b) Find the temperature at which F and C are equal.

Question 10

Two phone plans charge a monthly fee plus a cost for each gigabyte (GB) of data used.

Plan A: $25 per month plus $4 per GB.

Plan B: $45 per month plus $2 per GB.

(a) Write an equation to find the number of GB, g, for which both plans cost the same.

(b) Solve your equation, and find the monthly cost of each plan for that amount of data.

Linear equations: answers

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Question 1

Answer: (a) x = 6 (b) x = 7 (c) x = 15 (d) x = 6

Question 2

Answer: (a) x = 5 (b) x = 9 (c) x = 20

Question 3

Answer: Yes. Left side: 5 × 4 - 3 = 17. Right side: 2 × 4 + 9 = 17. Both sides are equal.

Question 4

Answer: (a) 6n - 4 = 32 (b) n = 6

Question 5

Answer: (a) x = 5 (b) x = 4 (c) x = 1

Question 6

Answer: (a) x = 5 (4x = 20) (b) x = 6 (2x + 6 = 5x - 12, so 18 = 3x) (c) x = -5 (-15 = 3x)

Question 7

Answer: (a) x = 17 (b) x = 14 (4x - 2 = 3x + 12) (c) x = 12 (5x/6 = 10)

Question 8

Answer: (a) t = 5 (25 = 5 + 4t) (b) w = 8 (46 = 2(15 + w))

Question 9

Answer: (a) C = 40 (1.8C = 72) (b) -40° (C = 1.8C + 32 gives -0.8C = 32)

Question 10

Answer: (a) 25 + 4g = 45 + 2g (b) g = 10 GB; each plan costs $65.