Algebra: 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

The perimeter of a rectangle is given by the formula $P = 2l + 2w$. Find P when $l = 8$ and $w = 5$.

Question 2

The area of a rectangle is given by $A = lw$. Find A when $l = 12$ and $w = 7$.

Question 3

Average speed is given by $s = d/t$. Find s when $d = 150$ and $t = 3$.

Question 4

Pencils cost $2 each. Write a formula for the total cost C dollars of n pencils.

Section B: Standard (Questions 5-10)

Question 5

A taxi fare in dollars is given by $C = 4 + 2.5d$, where d is the distance travelled in kilometres. Find the fare for a 12 km trip.

Question 6

The formula $F = 9C/5 + 32$ converts a temperature in degrees Celsius (C) to degrees Fahrenheit (F). Convert 25°C to degrees Fahrenheit.

Question 7

The area of a triangle is given by $A = bh/2$, where b is the base and h is the height.

(a) Find A when $b = 10$ cm and $h = 7$ cm.

(b) Find h when $A = 48$ cm² and $b = 12$ cm.

Question 8

A farm has c chickens and d dogs.

(a) Write a formula for the total number of legs, L.

(b) Use your formula to find L when c = 5 and d = 3.

Question 9

The volume of a rectangular prism is given by V = lwh.

(a) Find V when l = 5 cm, w = 4 cm and h = 3 cm.

(b) A prism has volume 120 cm^3, length 6 cm and width 5 cm. Find its height.

Question 10

A plumber charges a call-out fee of $80 plus $65 per hour.

(a) Write a formula for the total cost C dollars for a job that takes h hours.

(b) Find the cost of a 3 hour job.

(c) A bill came to $405. How many hours did the job take?

Algebra: answers

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Question 1

Answer: P = 26

Question 2

Answer: A = 84

Question 3

Answer: s = 50

Question 4

Answer: C = 2n

Question 5

Answer: $34 (4 + 2.5 × 12)

Question 6

Answer: 77°F ((9 × 25)/(5) + 32)

Question 7

Answer: (a) 35 cm^2 (b) h = 8 cm (48 = 12h/2, so 6h = 48)

Question 8

Answer: (a) L = 2c + 4d (b) L = 22

Question 9

Answer: (a) 60 cm^3 (b) 4 cm (120 = 6 × 5 × h)

Question 10

Answer: (a) C = 80 + 65h (b) $275 (c) 5 hours (405 - 80 = 325, 325 ÷ 65 = 5)