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MULTIPLE CHOICE PROBLEMS

- 1** Which value of x makes this equation true?

$$4x^2 = 144$$

- a 3
- b 6
- c 18
- d 24

- 2** Which value of x makes the equation $1 + \sqrt{x} = 10$ true?

- a 3
- b 9
- c 18
- d 81

- 3** The equation $d = 3.6 \times \sqrt{h}$ represents the relationship between the distance, d , that a person can see in an open field, in kilometres, and the person's height, h , in metres.

One afternoon, Amy can see a distance of 4.5 km.

Which of the following is closest to Amy's height?

- a 1.1 m
- b 1.6 m
- c 2.1 m
- d 2.5 m

- 4** What is the value of x in the equation

$$25 - \sqrt{x} = 9?$$

- a 4
- b 16
- c 225
- d 256

5 Banking on a Car

Juan borrows money from his mom to buy a used car.

His mom uses the equation shown below to determine the number of monthly payments Juan will make to pay her back.

$$1.13T = 75n + d$$

In the equation,

- T represents the total cost of the car before tax, in dollars,
- n represents the number of monthly payments and
- d represents the amount of his down payment, in dollars.

How many monthly payments will Juan have to make to pay his mom back fully for a car that costs \$2000 before tax with a down payment of \$535?

Show your work.

The number of monthly payments is _____.

6 Picking Pumpkins

Joey works at a farm picking pumpkins. He gets paid an hourly rate of \$13 and 10¢ for every pumpkin he picks.

The equation below represents his total earnings, E , which depends on the number of hours worked, n , and the number of pumpkins picked, p .

$$E = 13n + 0.10p$$

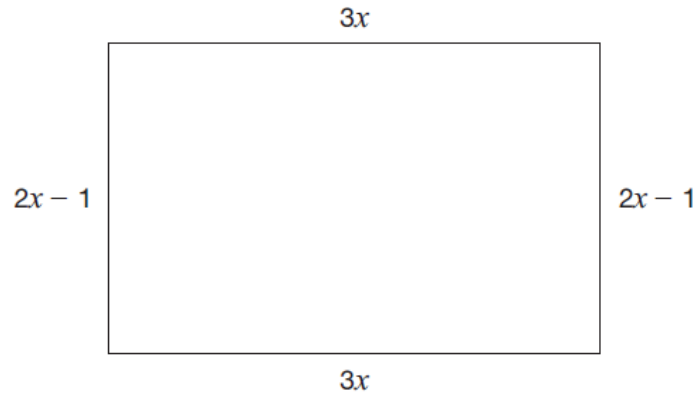
Determine how many pumpkins he picked if he worked 6 hours and earned \$93.

Show your work.

Joey picked _____ pumpkins.

7 Great Lengths

The rectangular yard pictured below has algebraic expressions for its side lengths, in metres.



The perimeter of the yard is 126 m.

Complete the equation below so that it represents the perimeter of the yard.

$$126 = \underline{\hspace{10cm}}$$

Determine the value of x using your equation.

Show your work.

The value of x is .

8 How Many Uniforms?

The equation $C = 20n + 35$ represents the relationship between the cost of school volleyball uniforms, C , in dollars, and the number of uniforms ordered, n .

- The uniform company requires that the school order a minimum of 15 uniforms.
- The school has a maximum of \$600 to spend on the uniforms.

Determine the possible values for n and C in this situation.

Show your work.

The possible values for n are _____.

The possible values for C are _____.

9 Reduce, Reuse and Recycle

A high school is starting a recycling program.

The relationship between the total cost of the program, C , and the number of recycling bins, n , is represented by the equation $C = 48n + 75$.

The school must install a minimum of 12 recycling bins and has a maximum of \$1000 to spend on the program.

What are the possible values of C and n in this situation?

Justify your answer.

The possible values of n are _____.

The possible values of C are _____.

ANSWERS

1) b 2) d 3) b 4) d

5) 23 monthly payments

6) 150 pumpkins

7) Answers may vary. For example, $126 = 3x + (2x - 1) + 3x + (2x - 1)$ or $126 = 10x - 2$.

The value of x is 12.8 metres.

8) Possible values of n : 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28

Possible values of C : \$335, \$355, \$375, \$395, \$415, \$435, \$455, \$475, \$495, \$515, \$535,
\$555, \$575, \$595

9) Possible values of n : 12, 13, 14, 15, 16, 17, 18, 19

Possible values of C : \$651, \$699, \$747, \$795, \$843, \$891, \$939, \$987