

Review Package - Extended Answer

1 Valerie, her brother Matthew and their friend Philip collected money to help homeless teenagers in their neighborhood.

Philip collected a quarter of the amount Matthew collected. On her own, Valerie collected \$97.35. All together they collected \$300.00.

How much money did Matthew and Philip collect individually?

Show your work.

2 If I add \$3.00 to 5 times the money I have, the result is the same as if I were to subtract \$18.00 from 6 times what I have.

How much money do I have?

Show your work.

3 One number is double the value of another. Their sum is -21.

What are the two numbers?

Show your work.

4 One number is five greater than another number and the sum of the two numbers is 29.

What are the two numbers?

Show your work.

5 The ages of three brothers are consecutive multiples of 5. The sum of their ages is 90 years.

How old is Benjamin, the youngest brother?

Show your work.

6 The price of a bicycle is 3 times that of a pair of skis.

The cost of both the bicycle and the pair of skis is \$540.

What is the price of the bicycle?

Show your work.

7 Three times a number minus 70 is equal to 113.

What is the number?

Show your work.

8 A waiter in a restaurant is paid solely in tips. Saturday, he made twice what he had made Friday. Sunday he got \$30 less than he had made Saturday. For these three days he made \$350.

How much did he make in tips on each of these three days?

Show your work.

9 In their hockey league, the trio of Mario, Eric and Paul has scored 25 goals in 8 games. Of this total, Mario has 6 goals. Eric has 3 goals fewer than Paul.

How many goals did Paul score?

Show your work.

10 At the end of the year, the school organized an Ecological Day in which 430 students participated. During this activity, the number of Secondary 2 students was 3 times the number of Secondary 1 students. The number of Secondary 3 students was twice the number of Secondary 2 students.

How many Secondary 2 students participated in this activity?

Show your work.

11 In a fund-raising drive it was found that one person in two gave \$2.00. Two hundred people gave \$5.00 each and the rest gave \$10.00. The total collected was \$6200.00.

Louis had to provide a receipt for each donor. How many receipts did he have to write?

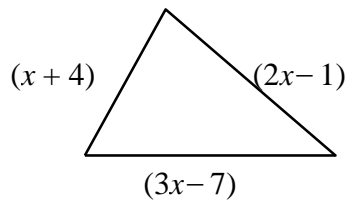
Show your work.

12 A student said to his teacher : "You are four times older than I am". His teacher replied : "Yes, but in 5 years, I will be only 3 times older than you!".

How old is the student?

Show your work.

13 The perimeter of a triangle is 44 cm. The sides are respectively $(x + 4)$, $(2x - 1)$ and $(3x - 7)$ centimetres.



What is the length of each side?

Show your work.

14 The sum of the ages of 3 persons is 78 years. The second person is twice as old as the first, and the third person is 2 years younger than the second.

Find the age of each person.

Show your work.

15 Every Saturday, Kelly and Cathy deliver the local newspaper. The manager pays them \$0.10 for each newspaper delivered.

Last Saturday, Kelly delivered 50 more newspapers than Cathy. Together they earned \$25.

How much was Cathy paid?

Show your work.

16 A popular singer wants to sell 52 000 copies of his latest compact disk.

He has already sold 26 000 copies in Quebec as well as a certain number in France. He predicts that he will have to sell 8000 more in francophone countries other than France.

How many copies of his compact disk will he have to sell in the other francophone countries to reach his objective?

Show your work.

17 Jack must solve the following problem before he can claim the contest prize he won. "Four fifths of a number, increased by triple the number is 1140."

What is the number?

Show your work.

18 In order to construct a bird house, a total of 59 pieces are required, including screws, nails and pieces of wood. To determine the number of nails, add 12 to quadruple the number of screws. To determine the number of pieces of wood, add 5 to the number of screws.

How many screws, nails and pieces of wood will be required to construct this bird house?

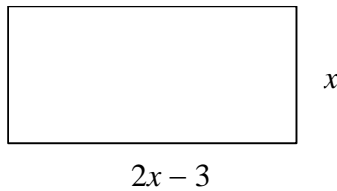
Show your work.

- 19 Julie plans to carpet a rectangular-shaped floor whose perimeter is 24 metres. The rectangle is $(2x - 1)$ metres wide and $(3x + 3)$ metres long.

Find the area of the floor to be carpeted.

Show your work.

- 20 The perimeter of a rectangular garden is 26.16 m.



What are the dimensions of the garden in metres?

Show your work.

- 21 Operating for the same length of time, a hair dryer consumes 5 times as many watts as a blender, whereas a curling iron consumes 100 watts less than a hair dryer. If all three appliances are left on for one full hour, they will use a total of 2100 watts of energy.

How many watts of energy does each appliance consume?

Show all your work.

22

A library has a collection of 31 books, all by the same author. Austin has read three times as many books as Victor. Jena has read four fewer books than Austin.

Together, the three of them have read all the books in the collection. However, not one of the three has read the same book.

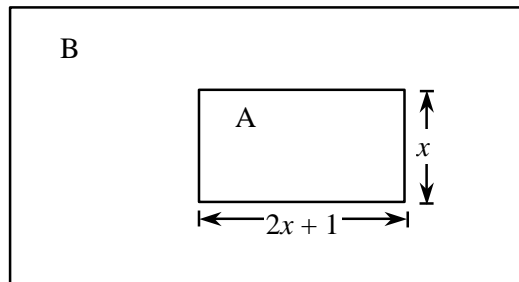
How many books has each of them read?

Show your work.

23

The owners of a ranch need to put a new fence around the horses' enclosure (Rectangle A) and the field (Rectangle B).

Here is the model they will follow:



The two rectangles are similar. The length of the large rectangle is triple that of the small rectangle.

The total length of fencing needed for the horses' enclosure (Rectangle A) and the field (Rectangle B) is 248 metres.

What is the actual perimeter of the horses' enclosure?

Show all your work.

24 The sum of the ages of three members of a family is 74 years.

The father is 5 times as old as the child.

The mother is 3 years younger than the father.

How old is each member of this family?

Show all your work.

25 Stephanie, her brother Ed, and sister Caroline each contributed money to buy their parents an anniversary gift.

Ed contributed twice as much as Stephanie and Caroline contributed \$10 more than three times the amount contributed by Stephanie.

Together they contributed \$310.

How much did each person contribute?

Show all your work.

26 An artist is designing the front cover of a children's book.

The length of the front cover of the rectangular book is 4 cm less than twice its width.

The perimeter of the front cover is 166 cm.

What is the area of the front cover of this book in cm^2 ?

Show all your work.

27

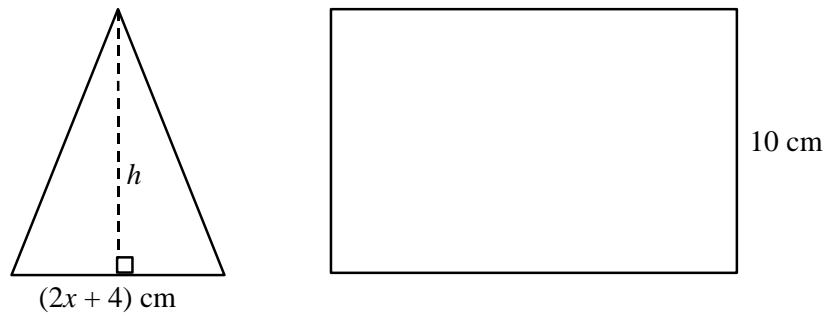
The height of the rectangle below is 10 cm.

The height of the triangle is equal to the height of the rectangle.

The measure of the base of the triangle is $(2x + 4)$ cm.

The base of the rectangle is twice the length of the base of the triangle.

The combined area of the triangle and rectangle is 300 cm^2 .



What is the perimeter of the rectangle?

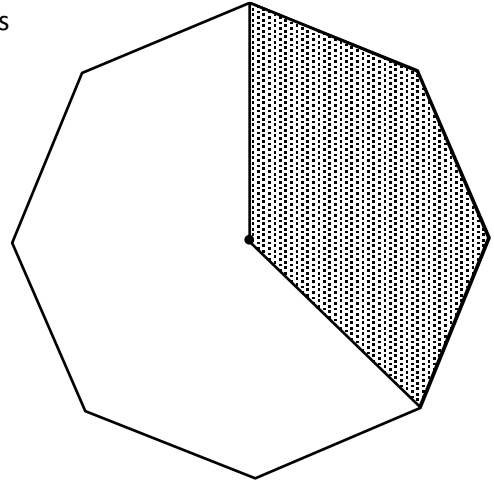
Show your work.

28 The area of the shaded part of the regular octagon on the right is $(5y - 7) \text{ cm}^2$.

The area of the whole octagon is 44 cm^2 .

What is the value of y ?

Show your work.



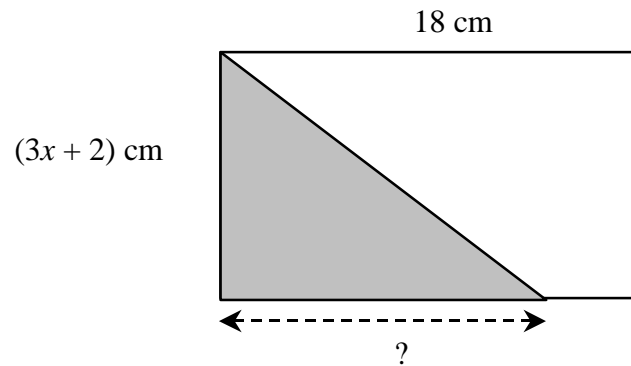
29 The shaded triangle in the diagram below has an area equal to $\frac{1}{3}$ the area of the rectangle.

The length of the rectangle measures 18 cm .

The width of the rectangle measures $(3x + 2) \text{ cm}$.

The area of the rectangle is 144 cm^2 .

What is the measure of the base of the shaded triangle?



Show all your work.

30 Three friends have a total of \$60. Jennifer has \$5 less than Lucy. Silvia has twice as much money as Jennifer.

How much money does each of them have?

Show your work.

31 Robert is having fun playing a video game called NINDODO. The hero, Super Charlot, has to discover the sum of the ages of the three guards, Gonzo, Touta and Kali in order to get into the castle and retrieve the treasure.

The clues on the screen are :

Gonzo is $3x - 6$ years old;

Touta is $x + 2$ years older than Gonzo;

Kali is $x + 4$ years younger Gonzo.

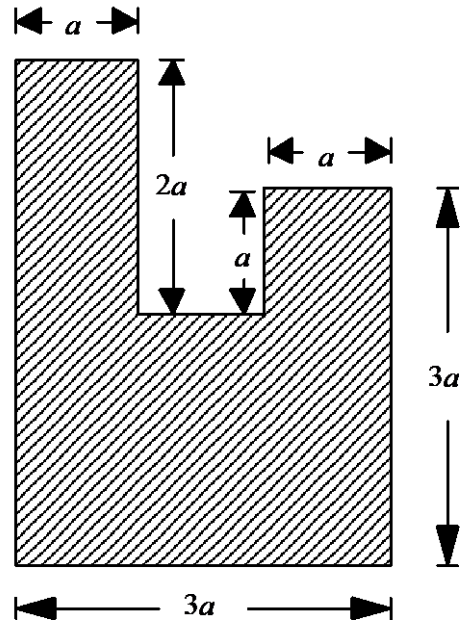
The sum of their ages is 205 years.

What is the age of the oldest guard?

Show your work.

32

The perimeter of the plot of land illustrated below is 56 m.



How many metres does the variable a represents?

Show your work.

33

The last Mathematics test comprised 14 questions. Each question was worth the same number of marks. Partial marks were allotted for some questions.

Karl's final mark was 49.

He got...

- full marks on 6 of the questions;
- one fourth of the marks on 4 questions;
- one third of the marks on 2 questions;
- half the marks on 1 question;
- no marks on 1 question.

What was the maximum number of marks allotted for each question?

Show your work.

34

Three groups of volunteers organized a canned food drive to help the poor.

740 cans of food were collected during the drive.

In the first group, each person collected 2 cans.

In the second group, comprised of 20 people more than the first group, each person collected 3 cans.

In the third group, which comprised twice as many people as the first group, each person collected 6 cans.

How many volunteers participated in this food drive?

Show your work.

35

David wrote 3 tests that were worth 100 marks each. On the second test, he had 36 fewer marks than twice his marks on the first test. On the third test, his mark was $\frac{3}{4}$ of his mark on the second test.

If the sum of his marks on the three tests is 216, what mark did he get on the first test?

Show your work.

36

A salad containing bananas, apples and oranges was made with a total of 21 pieces of fruit.

It contains 3 more apples than bananas.

It contains twice as many oranges as apples.

How many pieces of each type of fruit were used to make this salad?

Show all your work.

37

Alexandra paid \$72 for soap, body cream, and perfume. The body cream cost \$15 more than the soap and the perfume cost twice as much as the body cream.

How much did the perfume cost?

Show all your work.

38

Kristen picked 30 flowers from her garden and arranged them into a bouquet. She chose her three favourite flowers: carnations, roses and daisies.

She picked 5 fewer carnations than roses. She also picked 3 times as many daisies as carnations.

How many flowers of each type were in Kristen's bouquet?

Show all your work.

39

A rectangular soccer field has a perimeter of 314 metres. The length of the field is 5 metres more than triple the width. The grass on the field needs to be replaced with new sod. The sod cost \$1.50 per square metre.

How much will it cost to cover the soccer field with sod?

Show all your work.

40

In order to finance an outing at the end of the year, the students in Secondary Two sold two types of T-shirts: Children's T-shirts and Adult T-shirts.

Children's T-shirts were sold for \$3 each and Adult T-shirts were sold for \$5 each. Nicolas sold 24 T-shirts in all and took in a total of \$110.

How many T-shirts of each kind did Nicolas sell?

Show all your work.