

ГБОУ школа 1329

Пример вступительного испытания по математике в IB класс

Время выполнения 45 минут

In a company, the ratio of the number of men to the number of women is 3 : 2

40% of the men are under the age of 25

10% of the women are under the age of 25

What percentage of all the people in the company are under the age of 25?

There are 1200 students at a school.

Kate is helping to organise a party.

She is going to order pizza.

Kate takes a sample of 60 of the students at the school.

She asks each student to tell her **one** type of pizza they want.

The table shows information about her results.

Pizza	Number of students
ham	20
salami	15
vegetarian	8
margarita	17

Work out how much ham pizza Kate should order.

Write down any assumption you make **and** explain how this could affect your answer.

Work out the value of $(9 \times 10^{-4}) \times (3 \times 10^7)$

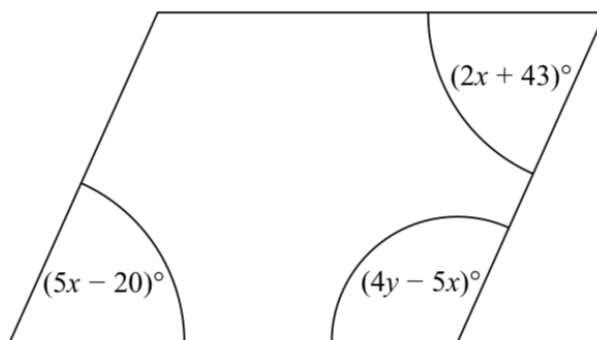
Give your answer in standard form.

$$\text{Pressure} = \frac{\text{force}}{\text{area}}$$

Find the pressure exerted by a force of 900 newtons on an area of 60 cm².

Give your answer in newtons/m².

Here is a parallelogram.



Work out the value of x and the value of y .

In a shop, all normal prices are reduced by 20% to give the sale price.

The sale price of a TV set is then reduced by 30%.

Mary says,

“ $30 + 20 = 50$, so this means that the normal price of the TV set has been reduced by 50%.”

Is Mary right?

You must give a reason for your answer.

Factorise fully $20x^2 - 5$

Make a the subject of $a + 3 = \frac{2a + 7}{r}$

Solid **A** and solid **B** are mathematically similar.

The ratio of the surface area of solid **A** to the surface area of solid **B** is 4:9

The volume of solid **B** is 405 cm^3 .

Show that the volume of solid **A** is 120 cm^3 .

Solve $x^2 > 3x + 4$

Show that $\frac{1}{1 + \frac{1}{\sqrt{2}}}$ can be written as $2 - \sqrt{2}$

Show that the equation $x^3 + 4x = 1$ has a solution between $x = 0$ and $x = 1$