

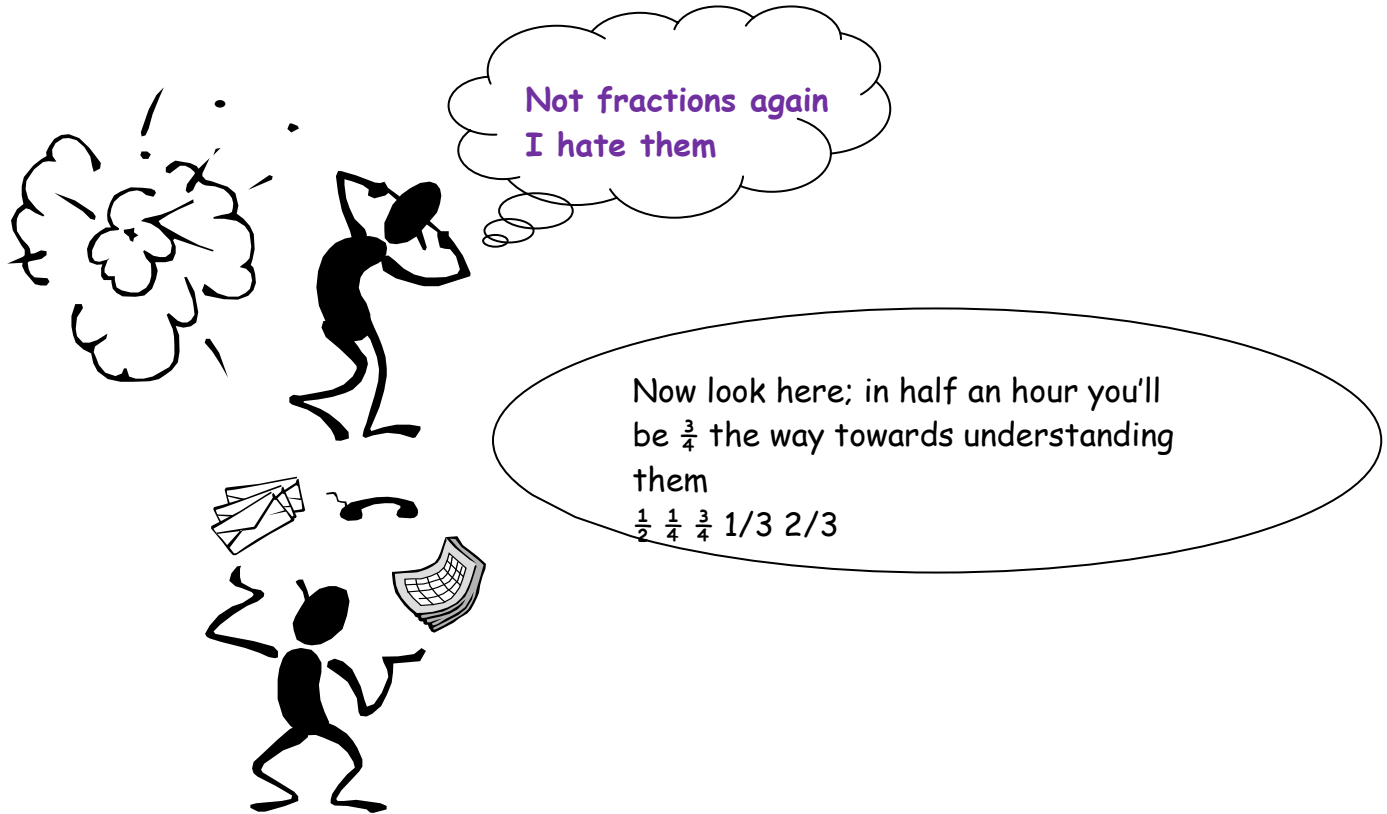
fs4u

Using Fractions

‘How To’ Booklet 1

Using Fractions

This 'How To' Booklet is to help you use the fractions $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$, $\frac{1}{3}$ to describe parts of things, e.g. $\frac{1}{2}$ of our year 12 students are on GNVQ courses



For this Booklet you will need in addition to pen and paper):- a calculator with a fraction button and transparent overlays.

By the end of this 'How To' Booklet you should be able to:-

- A Use the terms $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$, $\frac{1}{3}$ easily and accurately.
- B To add meaning to statistics e.g. pie charts, by using these fractions to describe sections of the circle.

Rules

Use your calculator

The bottom number tells you what to divide by:

Want to know what $\frac{1}{2}$ is? Divide by 2

For $\frac{1}{4}$, divide by 4, for a $\frac{1}{3}$ divide by 3, and so on.

1 What would you divide by, to get:

a $\frac{1}{9}$ b $\frac{1}{6}$ c $\frac{1}{10,000,000}$

Check your answers from the back page

Got That? Easy, isn't it?

Now let's do it.

Let's find fractions of numbers, e.g. $\frac{1}{2}$ of 90 = 45 because $(90 \div 2 = 45)$

2 $\frac{1}{2}$ of a) 24 b) 36 c) 75 d) 113 e) £92 f) £15

3 $\frac{1}{4}$ of a) 8 b) 48 c) 25 d) 69 e) £24 f) £26

4 $\frac{1}{3}$ of a) 18 b) 33 c) 96 d) 10 e) £9 f) £924

Check your answers.

So Far, So Good

In workbook 9, you will be doing more work with fractions. For now we are concentrating on using them.

In the next few questions, you are asked to describe numbers as ' $\frac{1}{2}$ ' or 'more than $\frac{1}{2}$ ' or less than $\frac{1}{2}$ '.

Start by working out what $\frac{1}{2}$ of the number is, then you can judge if the number you are given is less than that, or more than that.

5 Is 50 $\frac{1}{2}$ more than $\frac{1}{2}$ less than $\frac{1}{2}$ of 100?

6 is 62 $\frac{1}{2}$ more than $\frac{1}{2}$ less than $\frac{1}{2}$ of 92?

7 is 11 $\frac{1}{2}$ more than $\frac{1}{2}$ less than $\frac{1}{2}$ of 23?

8 is 3.5 $\frac{1}{2}$ more than $\frac{1}{2}$ less than $\frac{1}{2}$ of 6?

9 is 6.5 $\frac{1}{2}$ more than $\frac{1}{2}$ less than $\frac{1}{2}$ of 13?

10 is 1000 $\frac{1}{2}$ more than $\frac{1}{2}$ less than $\frac{1}{2}$ of 1362?

Check your answers.

Are you happy about finding $\frac{1}{2}$?
If so, let's look at $\frac{1}{4}$ as well.

HINT

The easiest and quickest way to work out a quarter is to halve and halve again, but you can also divide by 4.

To find $\frac{1}{4}$ of 56:- $\frac{1}{2}$ of 56 is 28; $\frac{1}{2}$ of 28 = 14, or $56 \div 4 = 14$

If you want to see if a number is nearest to $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$ you need to work in stages.

e.g. What fraction is 26 of 104?

A Find $\frac{1}{2}$ of 104, which is 52

B Find $\frac{1}{4}$ of 104, which is 26 so 26 is $\frac{1}{4}$ of 104

Try these:-

- 11 What fraction is 13 of 26?
- 12 What fraction is 15 of 60?
- 13 What fraction is 90 of 360?
- 14 What fraction is 6 of 12?
- 15 What fraction is 9 of 18?
- 16 What fraction is 2.5 of 5?
- 17 What fraction is 1.25 of 5?
- 18 What fraction is 500 of 2000?
- 19 What fraction is 50 of 200?
- 20 What fraction is 10 of 20?

Check your answers

Now let's go to $\frac{3}{4}$!

If the number is quite a bit more than $\frac{1}{2}$, then you can describe it as 'about $\frac{3}{4}$ '!

To give a number that is 'about $\frac{3}{4}$ ' of 40, remember that 20 is $\frac{1}{2}$, 10 is $\frac{1}{4}$, so any number around 30 is about $\frac{3}{4}$. ($20 + 10 = 30$)

- 21 If 17 is $\frac{1}{2}$ of 34, and 8.5 is a $\frac{1}{4}$, what is about $\frac{3}{4}$ of 34?
- 22 Give a number that is about $\frac{3}{4}$ of 13. ($\frac{1}{2}$ is 6.5, $\frac{1}{4}$ is 3.25)
- 23 Give a number that is about $\frac{3}{4}$ of 20

Check your answers

Ready for $\frac{1}{3}$?

RULE

To find $\frac{1}{3}$, divide by 3

To find $\frac{2}{3}$, divide by 3 and multiply by 2

24 What is $\frac{1}{3}$ of 30?

25 What is $\frac{2}{3}$ of 30?

26 What is $\frac{1}{3}$ of 99?

27 What is $\frac{2}{3}$ of 99?

28 What is $\frac{1}{3}$ of £27?

29 What is $\frac{2}{3}$ of £27?

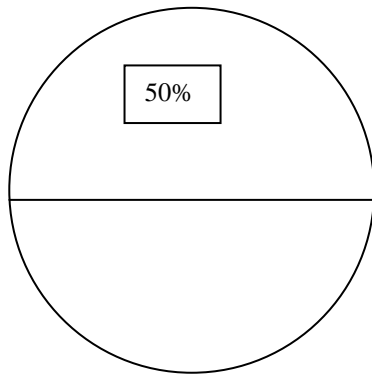
Check your answers

That's the worse part over.

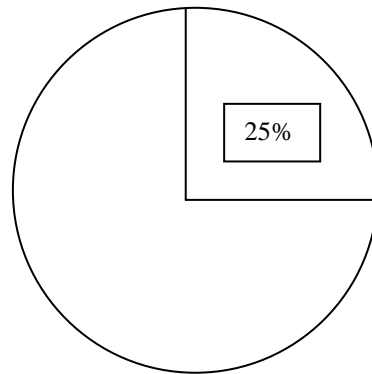
Fractions of Pie Charts

You need the transparent overlays or SMP angle measures which show circles divided into halves, quarters, thirds. Use these to put over the pie charts to find the closest to the lightly shaded part. You may find your answers are different from the ones at the end. This does not mean you are wrong. Check with a maths teacher if you are not sure.

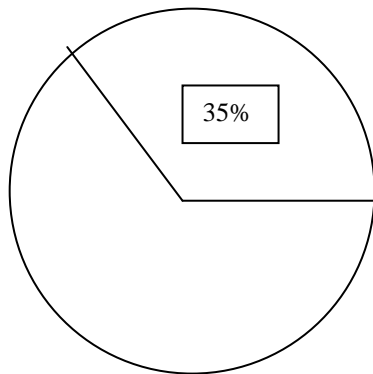
30



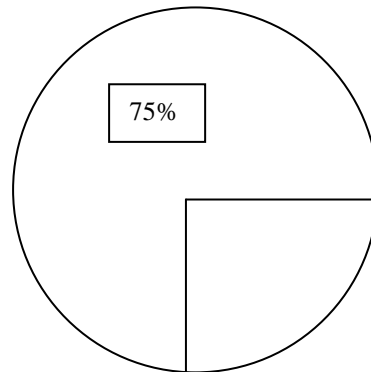
31



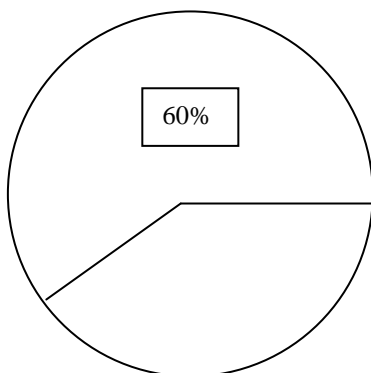
32



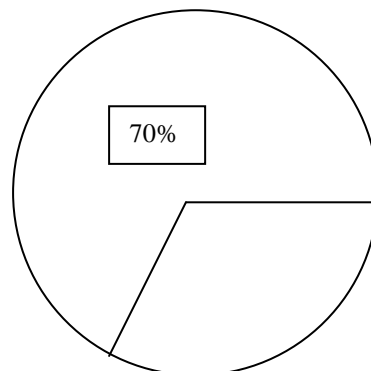
33

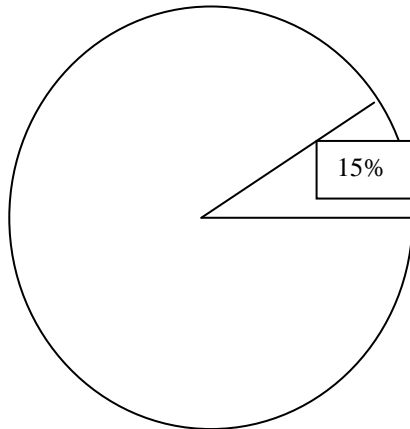
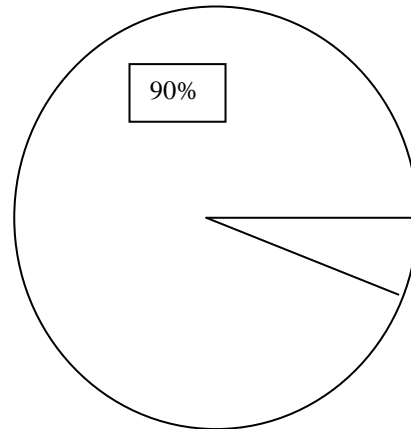
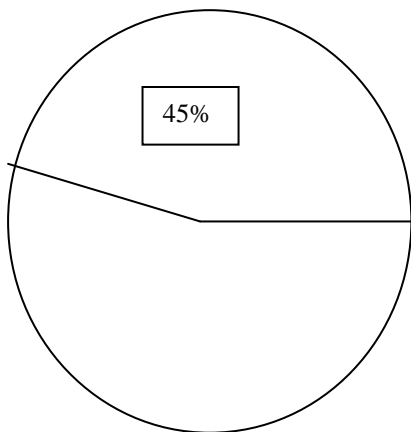
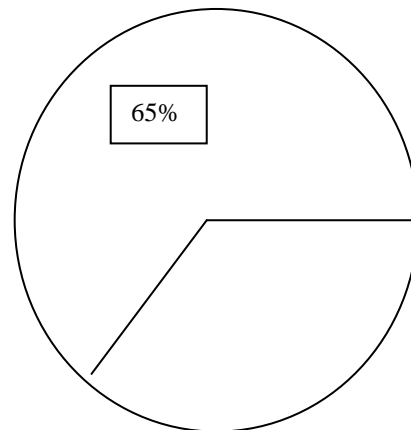


34



35



36**37****38****39**

Now do the test – you can look back at the work

Self Assessment Test

- 1 $\frac{1}{2}$ of 60
- 2 $\frac{1}{4}$ of 60
- 3 $\frac{1}{3}$ of 60
- 4 $\frac{2}{3}$ of 60
- 5 $\frac{3}{4}$ of 60
- 6 What fraction of this circle is shaded?

