

IGCSE higher

Week 7 homework

1 Express the recurring decimals as fractions

a) $0.\dot{4}$

b) $0.\dot{5}$

c) $0.\dot{7}$

d) $0.0\dot{3}$

e) $0.0\dot{8}$

f) $0.\dot{2}\dot{4}$

g) $0.3\dot{8}$

h) $0.9\dot{3}$

i) $0.\dot{2}\dot{3}\dot{4}$

j) $0.\dot{4}\dot{5}\dot{3}$

k) $0.8\dot{6}$

l) $0.05\dot{6}$

m) $0.15\dot{6}$

n) $0.6\dot{7}$

2 Increase the following amounts by the percentages give answers correct to 3 sig fig

a) £45 by 34%

b) £123 by 2%

c) £67 by 9.5%

d) £3,800 by 135%

3 Decrease the following amounts by the percentages give answers correct to 3 sig fig

a) £97 by 48%

b) £169 by 8%

c) £4,235 by 7.5%

d) £78 by 76%

4 If I invest £5,000 into an account with compound interest of 3%

How much will I have after a) 1 year

b) 4 years

c) 8 years

5 Mario invests £20,000 into an account with compound interest of 2.5%

How long will it take for the original amount to grow to £25,000?

6 Kirstie is looking to invest £13,000 into a bank account, for 6 years she has two choices

Account A offering simple interest of 2.7%

Account B offering compound interest of 2.5%

Which account will give the most after the 6 years?

7 Jack compares 2 bank accounts he wants to invest £5,500 for 3 years

Account A offering simple interest of 2%

Account B offering compound interest of 4.5% for the first year

then 0.9% compound interest for each year after

Which account will give the most after the 3 years?

8 A buy a new car for £14,999, the car depreciates in value by 11% per year

a) How much will it be worth after 5 years?

b) How many years will it be before it is worth half its original value?

9 An antique glass is worth £273 today. Its value has appreciated by 16% per year since its owner bought it 5 years ago, how much was it worth when it was bought

10 The population of a village increases by 2% per year, what will the population be in 3 years time rounded to the nearest person, if it stands at 252 at the present time.

11 A shop is having a 35% off sale find the original prices of the items from the sale prices given

a) a coat costing £45.49

b) a top costing £8.45

c) a pair of socks £2.40

12 A shop selling wollen mittens makes a 42% profit on the cost of making the mittens

- a) If the shop sells the mittens for £13.99, how much does it cost to make a pair of mittens?
b) The shop has a 20% off sale. What is their percentage profit now?

- 13** Dan buys a camera in a 35% off sale. If he pays £175.49 how much was it originally?
- 14** A restaurant bill comes to £57.80, it has a service charge of 10% added
How much was the restaurant bill prior to the service charge
- 15** My tomatoe plants have grown by 18% in the last 2 weeks, if they now measure 1.81m
How much did they measure 2 weeks ago?
- 16** Tom buys a rug for £230, he sells it a year later for £180 what is the percentage loss he makes?
- 17** Over 2 weeks a prize pumkin increase in weight from 25.6kg to 28.2kg
What is the percentage increase in weight?
- 18** A picture measures 10cm by 15cm. If the side lengths are increased by 20%
What is the percentage increase in the area
- 19** A library has books in the ratio fiction to non-fiction 7 : 3
60% of the fiction books are hardback and 20% of the non fiction books are hardback
What percentage of all the books in the library are hardback?
- 20** An orange drink uses 1 part orange squash to 6 parts water
a) I make a drink with 3 litres of wter, how much orange squash must I use
b) I want to make a drink of 420ml, how much orange squash and water must I use now?
- 21** Gemma, aged 10, Neil aged 13, and Fryn aged 11 divide £22.78 between them in the ratio of their ages. How much do they each get?
- 22** Tara and Harold divide some sweets between them in the ratio 3 : 5
Harold gets 14 more sweets than Tara, how many sweets do they each get?
- 23** a)Harley's house has a value of £160,00 correct to 2 significant figures,
i) what is the least possible value of his house?
ii) what is the most possible value of his house?
b)The value of Rita's house increased by 5%, it's new value was £210,000
What was the value prior to this increase?
- 24** Brian invests £3,400 into an account with compound interest of x%
After 5 year he has £3,608.96
What was the interest on the amount?