# Could You Owe More than America?

NAME: ...........................................................................................

CLASS: ...........................................................................................

DATE: .....................................................

## Basic

1) Convert the following decimals to percentages:

a) 0.2                    b) 0.125                    c) 0.48

d) 0.13                   e) 0.045                   f) 0.0025

2) Convert the following fractions to percentages:

a) $\dfrac{11}{100}$          b) $\dfrac{31}{50}$          c) $\dfrac{17}{25}$

d) $\dfrac{1}{2}$            e) $\dfrac{3}{4}$            f) $\dfrac{2}{5}$

3) Find:

a) 10% of £25             b) 50% of £5500             c) $33\dfrac{1}{3}$ % of £36

4) 30% of the children in a class are left-handed. If there are 30 children in the class, how many are right-handed?

5) A plot of land worth £28,000 in 2009 is now worth 15% more. What is the new value of the land?

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## Core

1) Sarah invests £4500 in a savings account. In one year it earns £135 interest. Calculate the annual interest rate as a percentage.

2) A loaf of bread costs £1.23. The price is increased by 3%. Calculate:

a) the increase in price                           b) the new price

3) A garage buys a car for £11,975. It sells the same car for £13,999.

a) How much profit does the garage make?

b) Express this profit as a percentage of the cost price.

4) Find the compound interest on £1600 at a rate of 4.5% per annum over a period of five years.

5) The number of bacteria in a test tube is 60,000. The bacteria reproduce at a rate of 35% every four hours. Calculate the number of bacteria in the test tube after one day.

6) 60 millilitres of a drug is injected into a patient at 12 noon. The amount of drug in the body falls by 6.5% per hour. Calculate the amount of drug in the body at 4pm.

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## Advanced

1) Mr and Mrs Brown bought their house for £179,000. For the last three years its value has appreciated by 4.5%. What is the present value of the house?

2) Kevin's new car cost £15,995. Over the last two years it has depreciated by 15% each year. Calculate the present value of Kevin's car.

3) Simplify:

a) $y^4$ x $y^3$

b) $c^6$ x $c^{-3}$

c) $3m^4$ x $2m^2$

d) $5d^{-2}$ x $2d^{-5}$

e) $(2p^3)^2$

f) $(3n^{-3})^2$

g) $(a^2)^2$

h) $(p^3)^{-3}$

i) $(9n^3)^{-4}$

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## ANSWERS

### Basic

1) a) 20%
b) 12.5%
c) 48%
d) 13%
e) 4.5%
f) 0.25%

2) a) 11%
b) 62%
c) 68%
d) 50%
e) 75%
f) 40%

3) a) £2.50
b) £2750
c) £12

4) 21 children are right-handed

5) £32,200

### Core

1) 3%

2) a) £0.04
b) £1.27

3) a) £2024
b) 16.9%

4) £393.89

5) 363,207 bacteria.

6) 45.9ml

### Advanced

1) £204,268.74

2) £11,556.39

3) a) $y^7$
b) $c^3$
c) $6m^6$
d) $10d^{-7}$
e) $4p^6$
f) $9n^{-6}$
g) $a^4$
h) $p^{-9}$
i) $\dfrac{1}{6561} n^{-12}$