MATHEMATICS

N3

Unit 1

Numeracy

Basic Arithmetic

Whole Numbers

Exercise 1

Round the following numbers correct to the **nearest whole number**.

1) 15·32 **2)** 327·8 **3)** 59·52 **4)** 738·29 **5)** 826·192 **6)** 1234·5

7) 987·65 **8)** 13·84 **9)** 7·532 **10)** 123·45 **11)** 43·34 **12)** 152·4

13) 246·8 **14)** 38·25 **15)** 49·18 **16)** 99·08 **17)** 99·8 **18)** 1·234

19) 0·82 **20)** 3842·7

Round the following numbers to the **nearest ten**.

21) 43 **22)** 53 **23)** 74 **24)** 79 **25)** 86 **26)** 35

27) 48 **28)** 23 **29)** 123 **30)** 342 **31)** 346 **32)** 519

33) 876 **34)** 753 **35)** 835 **36)** 93 **37)** 99 **38)** 222

39) 666 **40)** 185

Round the following numbers to the **nearest hundred**.

41) 326 **42)** 732 **43)** 782 **44)** 150 **45)** 649 **46)** 531

47) 282 **48)** 934 **49)** 981 **50)** 3246 **51)** 7813 **52)** 7884

53) 8591 **54)** 6184 **55)** 8342 **56)** 2345 **57)** 3456 **58)** 23826

59) 72173 **60)** 94382

Round the following numbers to the **nearest thousand**.

61) 8100 **62)** 5820 **63)** 2426 **64)** 3529

65) 23820 **66)** 44400 **67)** 55500 **68)** 66770

69) 12345 **70)** 98765 **71)** 19384 **72)** 23824

73) 61800 **74)** 37342 **75)** 39684 **76)** 53412

Exercise 2 – Problem Solving

	245	100	324
39	63	50	77
	177	44	61

1) Find the sum of all the odd numbers in the box.
2) Find the difference between the largest and smallest number.
3) List the even numbers.

4) Write down the next 2 numbers in these sequences.
a) 1, 2, 3, 4, ,5, ___, ___
b) 2, 4, 6, 8, 10, ___, ___
c) 10, 15, 20, 25, 30, ___, ___
d) 100, 99, 98, 97, 96, ___, ___
e) 2, 5, 8, 11, 14, ___, ___

5) The owner of a sports shop buys footballs for £6.99 each and he sells them for £10. How much profit dos he make when he sells;
a) 1 football
b) 10 footballs
c) 17 footballs

6) **ESTIMATE** the answers to the following questions

a) 24 + 84	b) 39 + 42	c) 87 - 12
d) 68 - 43	e) 75 + 13	f) 55 - 29
g) 124 + 469	h) 524 – 364	i) 749 + 186
j) 645 + 274	k) 598 – 355	l) 265 + 86
m) 2478 + 3496	n) 1236 + 7416	o) 9421 - 4869
p) 5105 + 8416	q) 8540 + 789	r) 3674 - 1255

Decimals

Exercise 1

Round the following numbers correct to **1 decimal place**.

1) 8·43 **2)** 5·76 **3)** 2·39 **4)** 5·24 **5)** 3·18 **6)** 12·49

7) 11·02 **8)** 11·05 **9)** 23·81 **10)** 72·46 **11)** 93·55 **12)** 82·43

13) 7·98 **14)** 8·329 **15)** 6·483 **16)** 9·876 **17)** 12·345 **18)** 135·69

Round the following numbers correct to **2 decimal places**.

19) 5·382 **20)** 2·846 **21)** 9·305 **22)** 9·304 **23)** 7·826

24) 8·537 **25)** 6·692 **26)** 6·698 **27)** 13·492 **28)** 15·328

29) 43·135 **30)** 9·876 **31)** 12·345 **32)** 23·456 **33)** 33·333

34) 5·555 **35)** 3·8028 **36)** 472·3192

Exercise 2 - Add

1)	1·14	**2)**	4·03	**3)**	6·14
	+ 2·30		+ 5·81		+ 2·35
	·		·		·
4)	4·31	**5)**	2·25	**6)**	7·36
	+ 4·58		+ 3·46		+ 1·37
	·		·		·
7)	4·72	**8)**	4·81	**9)**	6·24
	+ 2·83		+ 3·45		+ 3·88
	·		·		·
10)	3·86	**11)**	7·99	**12)**	6·87
	+ 5·79		+ 1·77		+ 2·78
	·		·		·
13)	7·83	**14)**	8·47	**15)**	9·86
	+ 5·92		+ 6·54		+ 6·97

Exercise 3 - Add

Work out the answers to each of the following:-

1)	7·2 + 3·6	**2)**	5·7 + 4·5	**3)**	12·3 + 17·8
4)	16·5 + 14·2	**5)**	1·4 + 2·7	**6)**	4·28 + 2·15
7)	4·17 + 3·69	**8)**	5·22 + 1·79	**9)**	3·58 + 2·19
10)	1·11 + 6·66	**11)**	4 + 3·6	**12)**	12 + 4·2
13)	13·8 + 1·7	**14)**	56·1 + 3·46	**15)**	17·1 + 2·83
16)	1·7 + 2·57	**17)**	12·6 + 1·47	**18)**	14 + 0·29
19)	15 + 3.·42	**20)**	13 + 2·53		

Exercise 4 - Add

1) Add 3·28 and 14·02

2) Add 7·9, 4 and 3·72

3) 7·9 + 0·62 + 5

4) Add 8·6, 5 and 3·21

5) Add 0·68 to 1·7

6) Two tables are placed together to form a larger one.
The first table is 67·4 cm long and the second table is 56·8 cm long.
What is the total length?

7) Three boxes weigh 4·6 kg, 7·9 kg and 18·2 kg. What is the total weight?

8) What length of shelf is needed to hold books with thicknesses of
6·3 cm, 7·4 cm, 1·8 cm, 2·8 cm and 4·9 cm?

9) John weighs 45·2 kg and Allan weighs 40kg. What is their total weight?

Exercise 5 - Subtract

1)	27·58 – 13·27 .	**2)**	38·69 – 10·18 .	**3)**	42·22 – 1·02 .
4)	29·56 – 3·16 .	**5)**	75·59 – 23·28 .	**6)**	68·88 – 2·06 .
7)	82·73 – 0·22 .	**8)**	55·79 – 23·01 .	**9)**	82·38 – 0·11 .
10)	99·19 – 18·19 .	**11)**	75·46 – 12·12 .	**12)**	38·67 – 18·17 .
13)	38·67 – 5·06 .	**14)**	28·46 – 12·58 .	**15)**	99·88 – 7·89 .

Exercise 6 - Subtract

Work out the answers to each of the following:

1)	6·8 – 4·3	**2)**	9·6 – 1.8	**3)**	32·7 – 14·2
4)	15·6 – 14·7	**5)**	26·9 – 12·4	**6)**	17·28 – 10·43
7)	56·48 – 25·29	**8)**	82·04 – 63·48	**9)**	92·16 – 25·31
10)	83·58 – 36·21	**11)**	25·83 – 15·4	**12)**	36·42 – 15·9
13)	83·29 – 16·3	**14)**	25·62 – 7·3	**15)**	34·26 – 1·09
16)	26·4 – 15·35	**17)**	12·4 – 5·62	**18)**	17·4 – 8·99
19)	34·6 – 2·11	**20)**	73·2 – 16·78	**21)**	14 – 3·2
22)	83 – 5·6	**23)**	46 – 3·7	**24)**	36 – 8·08

25) 42 – 6·72

26) Take 19·2 from 76·8

27) From 0·67 subtract 0·38

28) Subtract 1·9 from 10·2

Exercise 7 - Multiply

1) $16{\cdot}3 \times 6$	**2)** $29{\cdot}4 \times 7$	**3)** $38{\cdot}6 \times 2$
4) $29{\cdot}3 \times 4$	**5)** $51{\cdot}6 \times 2$	**6)** $29{\cdot}7 \times 3$
7) $23{\cdot}8 \times 9$	**8)** $14{\cdot}81 \times 5$	**9)** $29{\cdot}31 \times 3$
10) $93{\cdot}37 \times 7$	**11)** $18{\cdot}81 \times 5$	**12)** $38{\cdot}72 \times 4$
13) $29{\cdot}9 \times 6$	**14)** $17{\cdot}81 \times 8$	**15)** $14{\cdot}93 \times 9$
16) $83{\cdot}8 \times 8$	**17)** $56{\cdot}92 \times 4$	**18)** $73{\cdot}24 \times 5$
19) $9{\cdot}49 \times 9$	**20)** $92{\cdot}01 \times 7$	**21)** 15×8
22) $7{\cdot}42 \times 6$	**23)** $28{\cdot}39 \times 5$	**24)** $60{\cdot}02 \times 9$

Exercise 8 - Multiply

1) $4{\cdot}2 \times 10$	**2)** $7{\cdot}3 \times 10$	**3)** $2{\cdot}8 \times 10$
4) $14{\cdot}3 \times 10$	**5)** $17{\cdot}28 \times 10$	**6)** $18{\cdot}29 \times 10$
7) $38{\cdot}35 \times 10$	**8)** $42{\cdot}02 \times 10$	**9)** $3{\cdot}1 \times 100$
10) $6{\cdot}7 \times 100$	**11)** $4{\cdot}3 \times 100$	**12)** $7{\cdot}9 \times 100$
13) $42{\cdot}81 \times 100$	**14)** $39{\cdot}91 \times 100$	**15)** $99{\cdot}81 \times 100$
16) $4{\cdot}3 \times 1000$	**17)** $6{\cdot}2 \times 1000$	**18)** $13{\cdot}3 \times 1000$
19) $19{\cdot}9 \times 1000$	**20)** $19{\cdot}91 \times 1000$	**21)** $14{\cdot}03 \times 100$
22) $39{\cdot}73 \times 1000$	**23)** $47{\cdot}83 \times 1000$	**24)** $57{\cdot}19 \times 1000$
25) $6{\cdot}7 \times 6$	**26)** $12{\cdot}5 \times 7$	**27)** $93{\cdot}4 \times 8$
28) $82{\cdot}5 \times 9$	**29)** $43{\cdot}8 \times 2$	**30)** $56{\cdot}7 \times 3$
31) $2{\cdot}47 \times 4$	**32)** $7{\cdot}38 \times 5$	**33)** $9{\cdot}42 \times 6$
34) $72{\cdot}8 \times 7$	**35)** $83{\cdot}2 \times 8$	**36)** $24{\cdot}67 \times 9$
37) $73{\cdot}24 \times 2$	**38)** $88{\cdot}56 \times 8$	**39)** $60{\cdot}02 \times 6$

Exercise 9 - Divide

1) 57 ÷ 10

2) 6·2 ÷ 10

3) 13·4 ÷ 10

4) 28·6 ÷ 10

5) 38·24 ÷ 10

6) 17·83 ÷ 10

7) 210·5 ÷ 10

8) 57·5 ÷ 100

9) 203·2 ÷ 100

10) 2432.3 ÷ 100

11) 1325.8 ÷ 100

12) 672·3 ÷ 100

13) 5325·6 ÷ 100

14) 1769·73 ÷ 100

15) 2693·64 ÷ 1000

16) 1775·6 ÷ 1000

17) 2935.67 ÷ 1000

18) 1956.21 ÷ 1000

19) 1234·5 ÷ 1000

20) 7324·6 ÷ 1000

Exercise 10 - Divide

1) 5·6 ÷ 10

2) 8·4 ÷ 10

3) 4·3 ÷ 10

4) 36·2 ÷ 10

5) 58·5 ÷ 10

6) 43 ÷ 10

7) 85 ÷ 10

8) 278 ÷ 10

9) 666 ÷ 10

10) 910 ÷ 10

11) 534 ÷ 100

12) 637 ÷ 100

13) 735 ÷ 100

14) 821 ÷ 100

15) 999 ÷ 10

16) 42 ÷ 100

17) 63 ÷ 100

18) 77 ÷ 100

19) 10 ÷ 100

20) 8 ÷ 100

20) 6.8 ÷ 2

21) 17·1 ÷ 3

22) 22·4 ÷ 4

23) 87·5 ÷ 5

25) 52·2 ÷ 6

24) 33·6 ÷ 7

25) 48·8 ÷ 8

26) 12·6 ÷ 9

27) 47·8 ÷ 2

30) 16·47 ÷ 3

28) 11·48 ÷ 4

29) 42 ÷ 5

30) 14·82 ÷ 6

31) 44·66 ÷ 7

35) 82 ÷ 8

32) 69·93 ÷ 9

33) 266·8 ÷ 4

34) 355·6 ÷ 7

35) 6·84 ÷ 9

Exercise 11 – Problem Solving

1) Two tables are placed together to form a larger one. If the first table is 67·4 cm long and the second table is 56·8 cm long, what is the total length?

2) A piece of wood is 37·4 cm long. If 12·7 cm is cut off from one end what length remains?

3) A child places 5 toy bricks of length 14·6 cm in a straight line. What is the total length?

4) A piece of ribbon 114·8 cm long is shared equally among 7 girls. What length should each girl receive?

5) Three boxes weigh 4·6 kg, 7·9 kg and 18·2 kg. What is the total weight?

6) A bottle of Coca-Cola holds 2 litres. What volume remains after a glass of 0·35 litres has been removed?

7) What length of shelf is needed to hold books with thicknesses of 6·3 cm, 7·4 cm, 1·8 cm, 2·8 cm and 4·9 cm?

8) Billy does 10 press ups in 26·8 seconds. How long does he take for each press up?

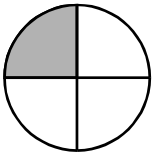
9) Six spoonfuls of medicine each holding 5·1 ml are removed from a bottle containing 50 ml. How much medicine is left in the bottle?

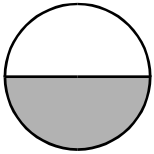
10) A car uses 0·12 litres of petrol for every mile it travels. How many litres will be used in travelling 9 miles?

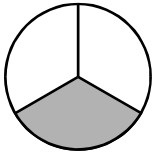
Fractions

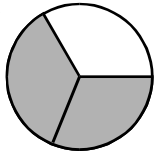
Exercise 1

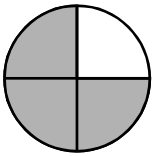
Write down the fraction shaded in each shape.

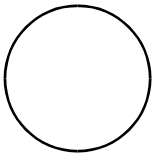
1) 

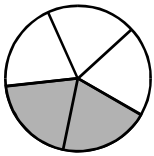
2) 

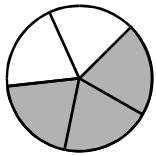
3) 

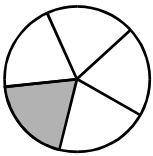
4) 

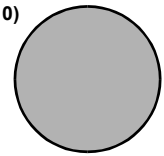
5) 

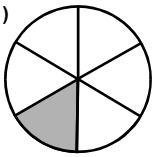
6) 

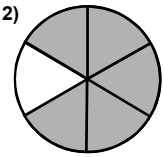
7) 

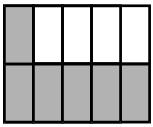
8) 

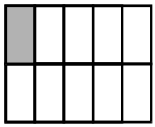
9) 

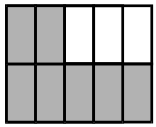
10) 

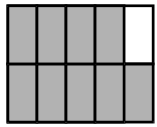
11) 

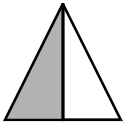
12) 

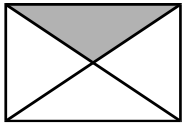
13) 

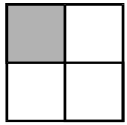
14) 

15) 

16) 

17) 

18) 

19) 

20) 

Exercise 2 - Fraction of a quantity (Single)

1) $\frac{1}{2}$ of 48	**2)** $\frac{1}{4}$ of 20	**3)** $\frac{1}{3}$ of 36	**4)** $\frac{1}{2}$ of 62
5) $\frac{1}{3}$ of 42	**6)** $\frac{1}{4}$ of 52	**7)** $\frac{1}{5}$ of 35	**8)** $\frac{1}{5}$ of 60
9) $\frac{1}{2}$ of 76	**10)** $\frac{1}{3}$ of 54	**11)** $\frac{1}{4}$ of 72	**12)** $\frac{1}{3}$ of 75
13) $\frac{1}{5}$ of 80	**14)** $\frac{1}{5}$ of 75	**15)** $\frac{1}{2}$ of 92	**16)** $\frac{1}{3}$ of 81
17) $\frac{1}{4}$ of 60	**18)** $\frac{1}{5}$ of 90	**19)** $\frac{1}{8}$ of 24	**20)** $\frac{1}{8}$ of 40
21) $\frac{1}{8}$ of 56	**22)** $\frac{1}{8}$ of 80	**23)** $\frac{1}{10}$ of 40	**24)** $\frac{1}{10}$ of 50
25) $\frac{1}{10}$ of 70	**26)** $\frac{1}{10}$ of 90	**27)** $\frac{1}{5}$ of 85	**28)** $\frac{1}{2}$ of 48
29) $\frac{1}{8}$ of 96	**30)** $\frac{1}{3}$ of 96	**31)** $\frac{1}{2}$ of 13	**32)** $\frac{1}{2}$ of 19

Exercise 3 – Fractions of a quantity

1) $\frac{1}{3}$ of 138	**2)** $\frac{1}{5}$ of 450	**3)** $\frac{1}{8}$ of 480
4) $\frac{1}{10}$ of 560	**5)** $\frac{1}{20}$ of 860	**6)** $\frac{1}{100}$ of 3800
7) $\frac{2}{3}$ of 156	**8)** $\frac{3}{5}$ of 935	**9)** $\frac{2}{5}$ of 470
10) $\frac{3}{8}$ of 576	**11)** $\frac{5}{8}$ of 192	**12)** $\frac{7}{8}$ of 304

13) $\frac{3}{10}$ of 370 **14)** $\frac{5}{8}$ of 128 **15)** $\frac{7}{10}$ of 790

16) $\frac{9}{10}$ of 450 **17)** $\frac{3}{20}$ of 660 **18)** $\frac{3}{8}$ of 776

19) $\frac{7}{20}$ of 780 **20)** $\frac{9}{20}$ of 540 **21)** $\frac{7}{20}$ of 540

22) $\frac{4}{5}$ of 145 **23)** $\frac{3}{10}$ of 650 **24)** $\frac{3}{8}$ of 424

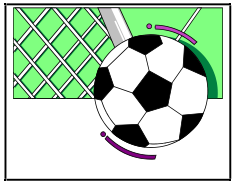
25) $\frac{7}{8}$ of 360 **26)** $\frac{3}{5}$ of 480 **27)** $\frac{3}{10}$ of 120

28) $\frac{4}{5}$ of 290 **29)** $\frac{7}{10}$ of 240 **30)** $\frac{7}{8}$ of 496

Exercise 4 - Problems

1) a) A football match last 90 minutes. How long is the first half?

b) A rugby match lasts 80 minutes. How many minutes does the first quarter last?



2) Brian has 45p, but he owes $\frac{1}{5}$ of it to Peter.

a) How much does he owe to Peter? **b)** How much does he have left?

3) $\frac{3}{10}$ of class of 30 pupils are absent.

a) How many are absent? **b)** How many are present?

4) 42 cars are in the car park. $\frac{1}{3}$ of them are blue.

How many blue cars are there?

5) Calculate these amounts in pence.

a) $\frac{1}{10}$ of £1 **b)** $\frac{3}{10}$ of £2 **c)** $\frac{3}{4}$ of £1 **d)** $\frac{1}{2}$ of £5

e) $\frac{1}{5}$ of £2 **f)** $\frac{2}{3}$ of £1.50

6) John gets $\frac{2}{3}$ of £72 as a prize. How much money does he get?

7) A tank holds 1600 litres of oil when it is full. If it is $\frac{1}{4}$ full, how many litres have been used?

8) Calculate

a) $\frac{2}{3}$ of 12cm $\frac{2}{3}$ **b)** $\frac{3}{4}$ of 20 pupils

c) $\frac{2}{5}$ of 30 grams **d)** $\frac{7}{8}$ of 24 days

9) There are 60 minutes in an hour. How may minutes are there in:

a) $\frac{1}{2}$ hour **b)** $\frac{1}{4}$ hour **c)** $\frac{3}{4}$ hour **d)** $\frac{1}{3}$ hour

10) In a test, $\frac{1}{5}$ of the pupils will be given an **A** grade, $\frac{1}{2}$ a **B** grade, $\frac{1}{4}$ a **C** grade and the rest a **D** grade.
Out of a group of 40 pupils, how many will get each grade?

11) Calculate

a) $\frac{3}{4}$ of £100 **b)** $\frac{1}{10}$ of £120 **c)** $\frac{3}{8}$ of £40 **d)** $\frac{2}{5}$ of £35

12) There are 90° in a right angle. How many degrees are in:

a) $\frac{2}{3}$ of a right angle **b)** $\frac{3}{4}$ of a right angle **c)** $\frac{3}{5}$ of a right angle

13) $\frac{2}{3}$ of a person's weight is water. Jean weighs 63 kg.
How much of this is water?

14) Calculate

a) $\frac{3}{10}$ of 240 m **b)** $\frac{2}{3}$ of 210 kg **c)** $\frac{3}{5}$ of 600 pupils **d)** $\frac{5}{8}$ of 120 cm

15) Calculate the length of video tape needed to record **two** TV programmes each lasting $\frac{3}{4}$ of an hour.

Percentages

Exercise 1 – Non Calculator

1) Work out:

a) 50% of £84	**b)** 25% of £1000	**c)** 20% of £80
d) 10% 0f £40	**e)** 20% of £6400	**f)** 33 ⅓ % of £81
g) 50% of £9	**h)** 10% of £52	**i)** 10% of £63
j) 75% of £48	**k)** 75% of £92	**l)** 66 ⅔ % of £45
m) 33 ⅓ % of £7.20	**n)** 66 ⅔ % of £153·60	**o)** 75% of £61
p) 10% of £15·50	**q)** 20% of £13·20	**r)** 10% of 20p

2) A turtle laid 132 eggs. 50% of them were eaten by birds.
How many were eaten by birds?

3) 20% of the pupils in a school are left handed.
If there are 1100 pupils, how many of them are left handed?

4) 25% of the items sold at a car boot sale were CDs.
How many CDs were sold if there were 5400 items?

5) In Glasgow in 2009, it was sunny for 20% of the time.
If there are 365 days in a year, how many days was it sunny for?

Exercise 2 - Calculator

1) Calculate:

a) 7% of £16 **b)** 9% of £65 **c)** 41% of £25 **d)** 89% of £530

e) 17% of £380 **f)** 22% of £60 **g)** 46% of £5 **h)** 22% of £680

i) 7% of £50 **j)** 19% of £60 **k)** 35% of £14 **l)** 11% of £90

m) 44% of £12.50 **n)** 5% of £17 **o)** 6% of £90 **p)** 84% of £68.50

q) 8·5% of £64 **r)** 7·2% of £620 **s)** 3.1% of £540 **t)** 10.7% of £889

u) $4\frac{1}{2}$% of £18 **v)** $12\frac{1}{2}$% of £84 **w)** $3\frac{1}{2}$% of £650 **x)** $2\frac{1}{2}$% of £12

Exercise 3 – Problem Solving

1) Heidi is offered 11% of £350 or 45% of £80.
Which offer should Heidi take?

2) Goats' cheese contains 15% fat.
How much fat is there in a pack which contains:

a) 240g **b)** 460g **c)** 0·86kg **d)** 0·38kg

3) Of the 3 cakes below, which one, *per helping*, is better for you in terms of fat content? (assume the cupcake is 1 helping)

500g Chocolate Cake

18% Fat

250g Carrot Cake

8% Fat

50g Cupcake

12% Fat

4)

A computer catalogue quotes prices to which a tax of 20% (VAT) must be added. What would be the price of the computer above?

3) **VAT** is short for 'value added tax'. It is a tax on goods and is money paid to the government. The current rate of V.A.T. is 20%.

Work out the **VAT** on each of the items shown below.

a)

Camera £142

b)

Fridge £285

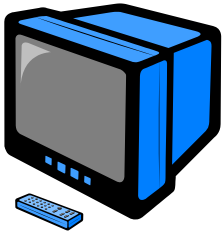
c)

Video HiFi £680

d)

Carpets £1250

e) Colour T.V.



Cost = £689

f) Computer

Cost = £2650

g) Car repair Bill

4 new tyres at £44.75 each	£
Oil	£3.89
Car check	£19.95
New Exhaust	£63.75

Work out the total
then add VAT to get the Bill.

Total = £

VAT = £

Bill = £

h) Windows

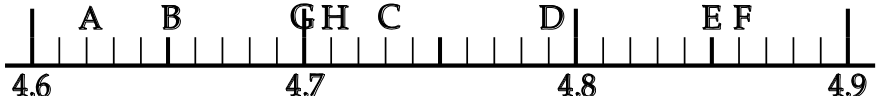
Work out the VAT to be paid on installing 8 new windows at £38.55 each.

Reading Scales

Exercise 1

In each of the following questions, write down the number marked by each letter (eg A = 4·62)

1)



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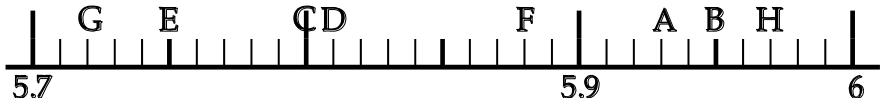
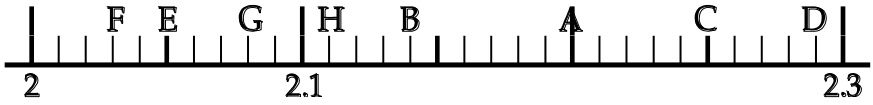
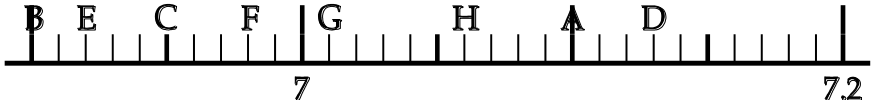


3)

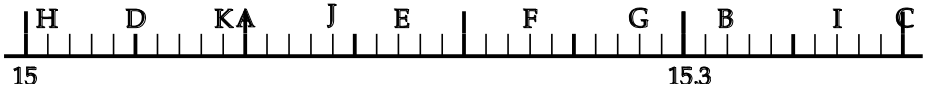


4)

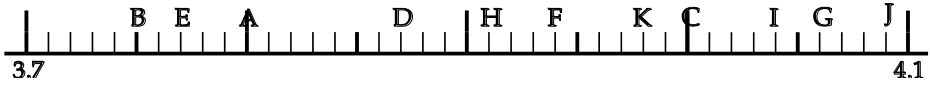
5)



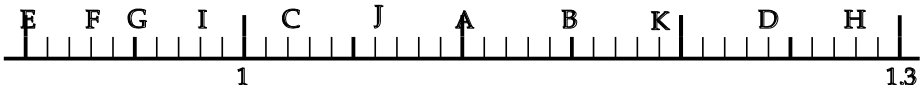
6)


H D K A J E F G B I C
15
15.3

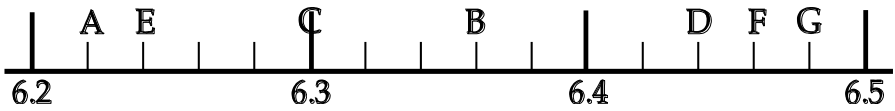
7)


B E A D H F K C I G J
3.7
4.1

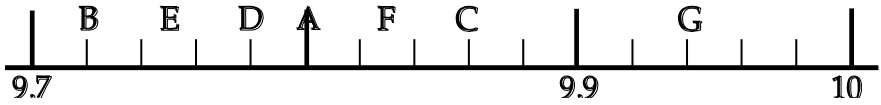
8)


E F G I C J A B K D H
1
1.3

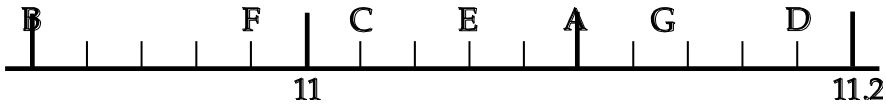
9)


A E C B D F G
6.2
6.3
6.4
6.5

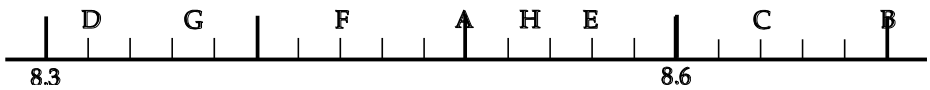
10)


B E D A F C G
9.7
9.9
10

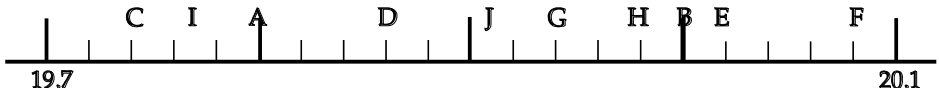
11)


B F C E A G D
11
11.2

12)

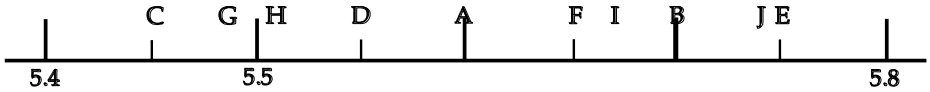

D G F A H E C B
8.3
8.6

13)

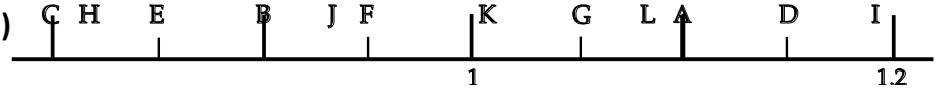


In Questions 14 and 15 below, some of the letters will have to be estimated as best you can.

14)



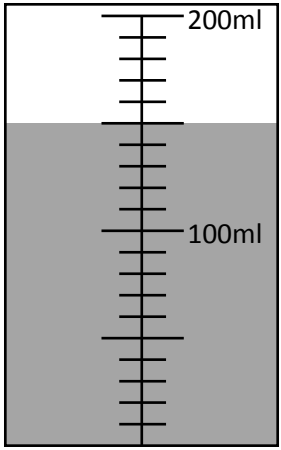
15)



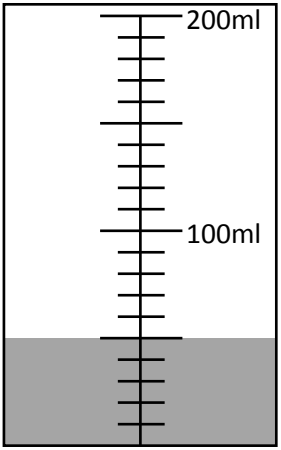
Exercise 2

Write down how much water is filled in these containers

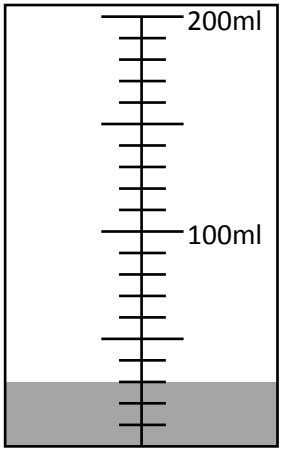
1)



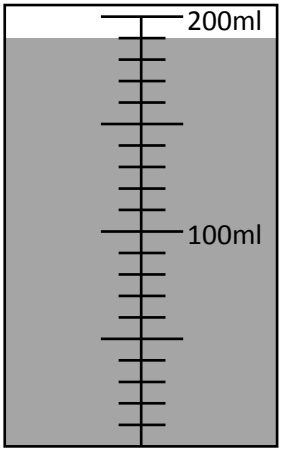
2)



3)

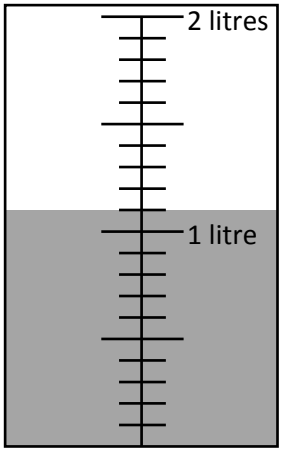


4)

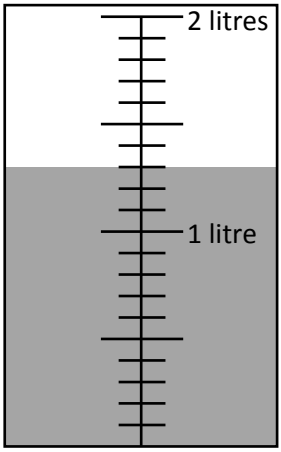


CAREFUL With these two!!

5)

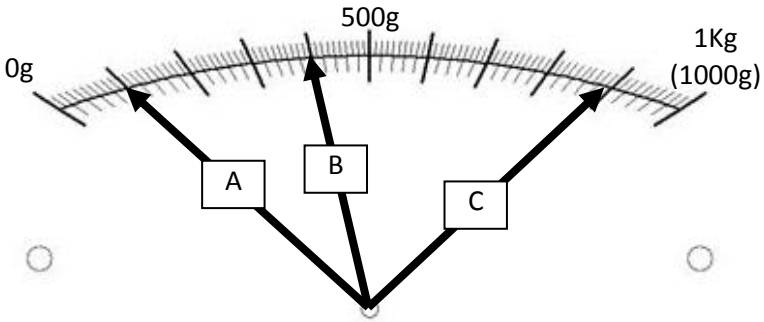


6)

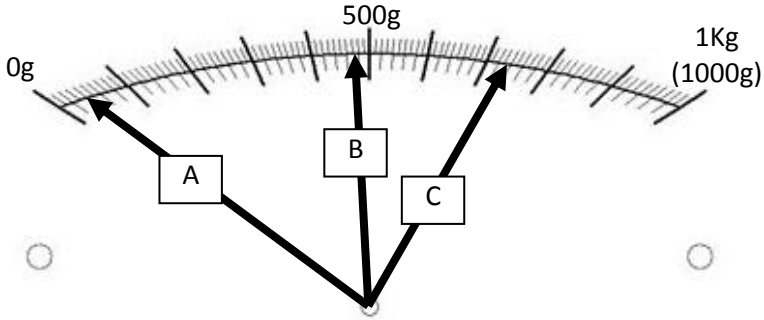


Write down what weight each arrow on the scales is pointing to

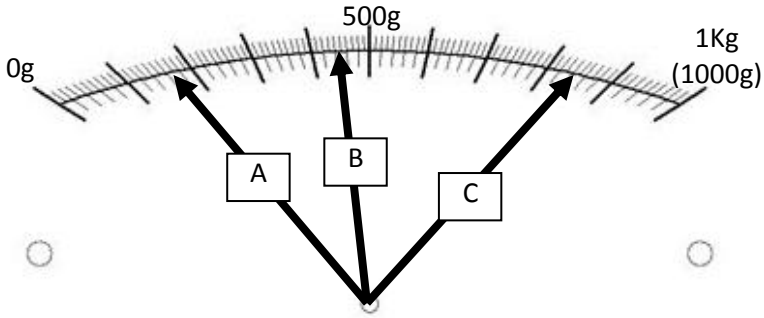
7)



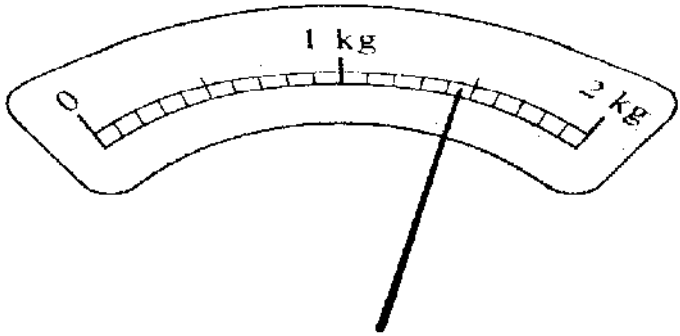
8)



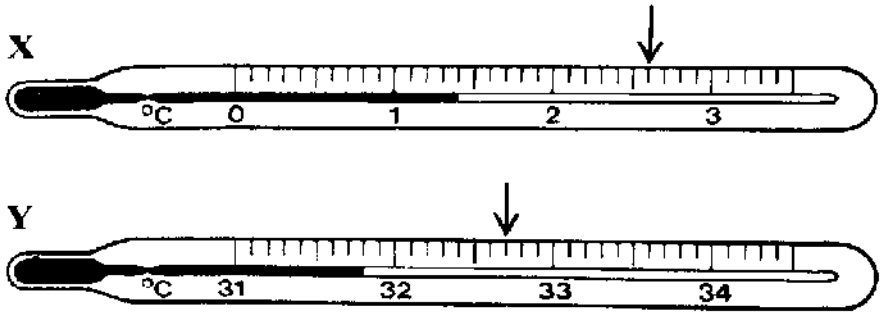
9)



16) What reading is indicated by the pointer on this weighing machine?

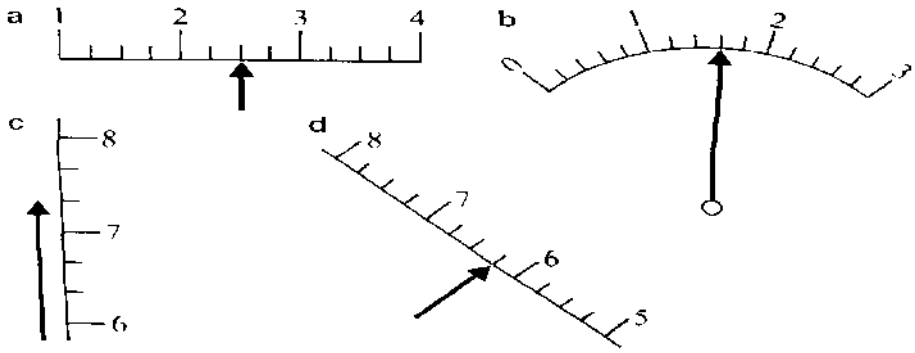


17) **a)** What reading is shown in each thermometer?

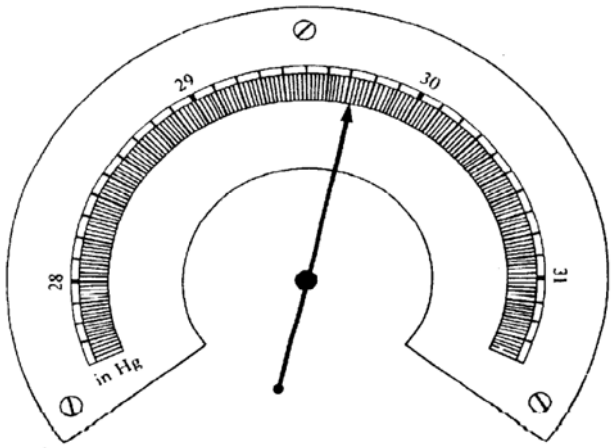


b) What temperatures are indicated by the 2 arrows on the thermometers?

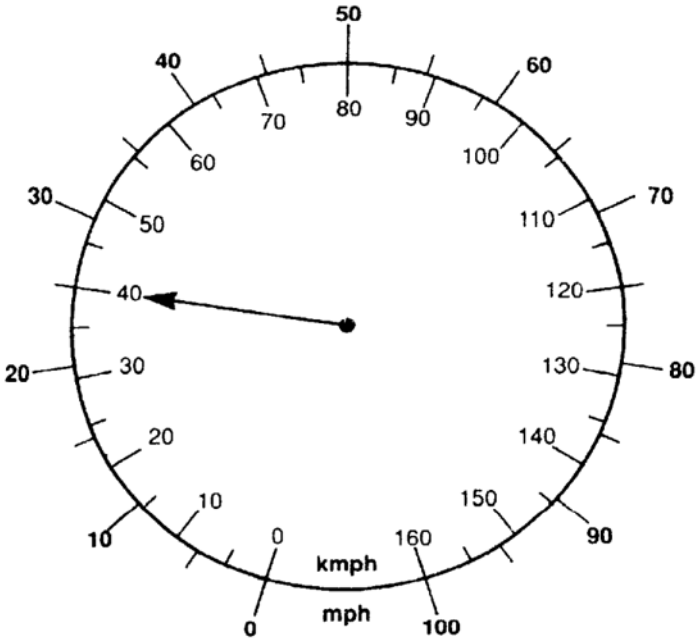
18) Write down the reading to which each arrow points in these diagrams.



19) What is the reading on this barometer scale?



20) **a)** What is the reading in mph shown on the speedometer?



b) The max speed limit for motorways is 70 mph.
Use the speedometer scales to find this speed in km per hour.

c) The standard speed limit in built up areas is 30 mph.
Use the speedometer scales to find this speed in km per hour.

d) The national speed limit for single roads is 60 mph.
Use the speedometer scales to find this speed in km per hour.

e) The speed limit for a bus on a dual carriage way is 60 mph.
Use the speedometer scales to find this speed in km per hour.

PROBABILITY

Exercise 1

Choose one word for each event:

IMPOSSIBLE **UNLIKELY** **LIKELY** **CERTAIN**

- Tomorrow will be Christmas day
- I will have pizza for dinner tonight
- It will be very hot tomorrow
- I will be in school tomorrow

- I will be in Disneyworld tonight
- It will get dark tonight
- I will be in bed by midnight tonight
- Tomorrow will be my birthday
- The grass will be purple tomorrow

Exercise 2

0 stands for IMPOSSIBLE and 1 for a CERTAIN event.

$\frac{1}{2}$ means there is an EQUAL chance of an event happening.

What is the probability that:

- The grass will be blue tomorrow
- You will breathe today
- Tossing a coin will get you a tail
- Rolling a die will get you an even number
- Rolling a die will get you an odd number

Exercise 3

1 If a letter is chosen at random from the word SUCCESS, what is the probability that it will be:

a) the letter S? **b)** the letter C?

2 If a letter is chosen at random from the word PEPPER, what is the probability that it will be:

a) the letter P? **b)** the letter E?

3 If a letter is chosen at random from the word GEORGE, what is the probability that it will be:

a) the letter E? **b)** the letter G?

c) a vowel(A,E,I,O,U) **d)** a consonant (not a vowel)?

4 If a letter is chosen at random from the word PENELOPE, what is the probability that it will be:

a) the letter E? **b)** the letter P?

c) a vowel? **d)** a consonant?

5 When a die is rolled what is the probability that the outcome is :

a) the number 5 ? **b)** an even number ? **c)** an odd number ?

6 A game consists of spinning an arrow which is equally likely to land on 1,2,3,4,5. What is the probability it will point to :

a) an even number? **b)** an odd number? **c)** the number 3 ?

7 There are 30 pupils in a class. 15 have blue eyes, 10 have brown eyes and 5 have green. What is the probability that a pupil will have:

a) blue eyes **b)** green eyes? **c)** brown eyes?

8 A box contains 10 white beads and 20 black beads. If a bead is drawn what is the probability that it is :

a) white **b)** black?

9 If a letter is chosen at random from the word WOODWORK, what is the probability that it will be:

a) the letter O? **b)** the letter W? **c)** a consonant?

10 If a letter is chosen at random from the word NEEDLEWORK, what is the probability that it will be:

a) the letter E? **b)** a vowel? **c)** a consonant?

11 When a card is drawn at random from a pack of 52 playing cards, what is the probability that it is:

a) an ace? **b)** a heart? **c)** the ace of spades? **d)** a king, queen or jack?

12 There are 50 cars of the same make in a showroom. 18 are blue, 15 white, 10 green, 7 red. If it is equally likely any one of them will be sold, what is the probability that it will be:

a) white?

b) green?

c) red or blue?

d) neither red nor blue?

Exercise 4

1) Five cards-10, jack, queen, king, ace- are shuffled face down. One of the cards is picked at random.

a) What is the probability that the ace is picked?

b) If the jack is drawn, and kept out, what is the probability that the next card chosen will be an ace?

2) A bag contains 5 white marbles, 3 black and 2 red.

a) What is the probability that if one marble is chosen at random it will be white?

b) If a white marble is chosen, and not replaced, what is the probability that a black marble will be chosen next?

3) A bag contains 6 red counters and 10 green counters.

a) If a counter is removed what is the probability that it is red?

b) If the counter was red and it was not replaced what is the probability that the next counter to be picked out would also be red?

4) A bag contains 1 red counter and 5 green counters.

a) If a counter is removed what is the probability that it is red?

b) If the counter was red and it was not replaced what is the probability that the next counter to be picked out would also be red?

5) A bag contains 5 red counters and 12 green counters.

a) If a counter is removed what is the probability that it is red?

b) If the counter was red and it was not replaced what is the probability that the next counter to be picked out would also be red?

6) A bag contains 8 red counters and 5 green counters.

a) If a counter is removed what is the probability that it is red?

b) If the counter was red and it was not replaced what is the probability that the next counter to be picked out would also be red?

7) The pupils in a class were asked how often they had visited the doctors last term.
The table gives the replies.

Visits	Frequency
1	5
2	6
3	15
4	3
5	1

a) i) How many were asked?

ii) How many said "2 times"

iii) What is the probability that if one of the pupils is chosen at random they will have said "2 times"

b) What is the probability that if someone from the class is chosen at random they will have said:

i) 4 times?

ii) Less than 3 times?

iii) More than twice?