Numeracy Revision

Add and Subtract

1. (a) 345 + 98·7 + 0·75   (b) 9000 + 563·3 + 78·95   (c) 78·9 + 7·751 + 0·04

    (d) 9800 − 45·97   (e) 8 − 5·759   (f) 16·45 + 9·34 − 11·4

Multiplying and Dividing

2. (a) 8941 x 3   (b) 34·47 x 6   (c) 7185 x 24

    (d) 15·7 x 100   (e) 0·05 x 10   (f) 194 x 1000

    (g) 3·4 x 200   (h) 17·64 x 40   (i) 941·5 x 3000

3. (a) 238 ÷ 7   (b) 14·7 ÷ 6   (c) 85·5 ÷ 500

    (d) 12·4 ÷ 40   (e) 113,040 ÷ 9000

Rounding

4. Round the following to 1 decimal place (a) 12·47 (b) 3·809 (c) 148·346 (d) 19·98

5. Round the following to 3 decimal places (a) 0·07458 (b) 130·69248 (c) 0·009347

6. Round the following to 2 significant figures. (a) 138·579 (b) 12,084 (c) 0·0057159

Percentage and Fractions of an Amount

7. Calculate (a) $\frac{3}{5}$ of £450 (b) $\frac{1}{4}$ of £95 (c) 20% of 450 g (d) 75% of 9 km

8. Calculate (a) 12% of 34 kg (b) 49% of $460 (c) 60% of 70·5 m (d) $\frac{7}{10}$ of 30·5

Mixed and Improper Fractions

9. Change the following into mixed numbers, simplify where possible (a) $\frac{7}{3}$ (b) $\frac{29}{4}$ (c) $\frac{165}{20}$

10. Change the following into improper fractions, simplify where possible (a) $3\frac{7}{8}$ (b) $9\frac{2}{5}$

11. (a) How many halves are in 6 ½ ? (b) How many quarters in 7?

Adding and Subtracting Fractions

12. Calculate (a) $\frac{2}{3} + \frac{5}{7}$ (b) $\frac{5}{12} + \frac{7}{24}$ (c) $\frac{3}{10} - \frac{1}{12}$

13. Calculate (a) $3\frac{2}{5} + 4\frac{4}{4}$ (b) $9 - 3\frac{2}{5}$ (c) $7\frac{3}{5} + 5\frac{2}{3} - 2\frac{1}{2}$

Multiplying fractions

14. Calculate (a) $\frac{4}{9} \times \frac{3}{8}$ (b) $3\frac{9}{10} \times \frac{4}{15}$ (c) $3\frac{3}{4} \times 1\frac{2}{5}$ (d) $4\frac{4}{5} \times 2\frac{2}{3} \times 7$

Dividing Fractions

15. Calculate (a) $\frac{2}{9} \div \frac{8}{15}$ (b) $1\frac{1}{8} \div \frac{3}{4}$ (c) $2\frac{1}{4} \div \frac{3}{10}$ (d) $2\frac{3}{7} \div \frac{1}{5} \div 1\frac{2}{3}$

L Deans
Peebles High School

Expressing quantities as percentages of another quantity

16.   Jane bought her house for £120,000 in 2010. She has it valued in 2015 and it is now worth £160,000.

      What is the percentage increase of the house?

17.   Steve got 13 out of 20 in his test.   Express this as a percentage.

18.   In a recipe you use 160g of sugar, 200g of flour, 200g butter and 250g of eggs. Express the sugar as a percentage of the whole recipe.

19.   Joe bought a new car for £14,500. The second he drove out the show room his car was only worth £11,020.

      Calculate the percentage loss of the car?

Compound Percentage Increase and Decrease

20.   Laura earns a salary of £28,000 in 2012. Each year she gets a 2% pay rise. Calculate her salary in 2015.

21.   A company car is valued at £23,700. For the tax return the owner depreciates the car by 8% every year.

      Calculate the cars worth after 5 years.

Convert between fraction, decimals and percentages

22.   In a Maths test Joe got 87%, Ross got 16 out of 18 and Alisdair got $\frac{9}{10}$. Who did the best in their test?

23.   Order the following from smallest to largest: 0.4, $\frac{1}{3}$, 36.5%, $\frac{37}{100}$, $\frac{725}{2000}$

Distance, Speed, Time

24.   A car covers 450 miles in 6 hours. Calculate the average speed.

25.   A train travels at an average speed of 105km/h. The journey takes 4 ½ hours. What is the distance that the train covers?

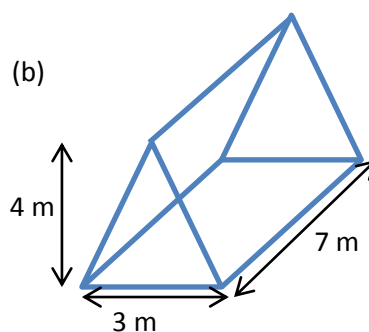26.   Calculate the time taken for a walker who walks at 3 ½ km/h to cover 18·4 km.

Volume

27.   Calculate the volume of
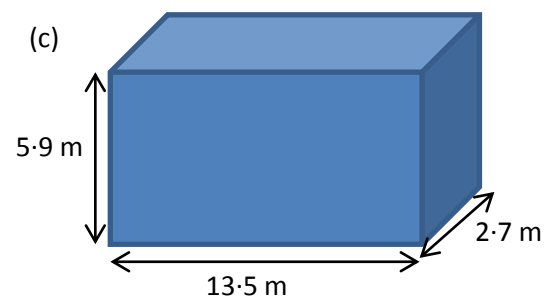
(a)

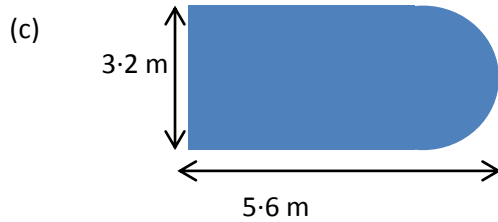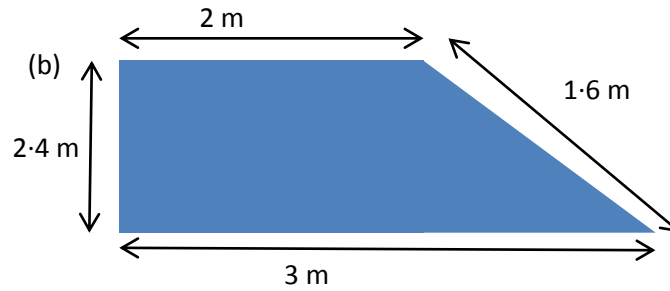15 cm

10 cm

(b)

4 m

3 m

7 m

(c)

5·9 m

13·5 m

2·7 m

L Deans
Peebles High School
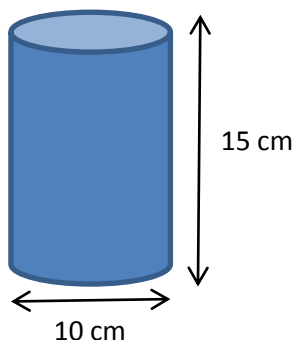
Area and Perimeter

28. Calculate the area and perimeter of

(a)

160 mm

220 mm

300 mm

(b)

2 m

2·4 m

1·6 m

3 m

(c)

3·2 m

5·6 m
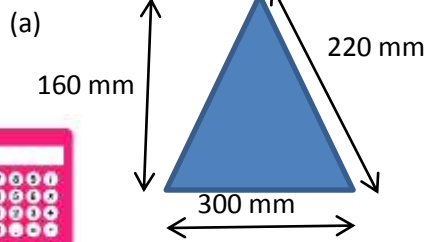
Ratio

29. Simplify the following ratios (a) 8 : 12 (b) 9 : 15 (c) 10 : 25 : 150 (d) 3·5 : 24·5

30. The scale on a map is 1 : 20,000. If a route measures 6 cm on the map, what is the distance, in km, in real life?

31. To make a fruit mocktail you need orange juice, lemon juice, lemonade and raspberry puree in the ratio 3:2:2:1. If you have 150 ml of orange juice, how much of each other ingredient do you need to make the mocktail?

Proportion

32. It costs a group of 4 adults £560 for a week in a hotel in Blackpool. How much would it cost a group of 3 adults in the same hotel for a week?

33. It takes 5 builders 34 days to build a house. If there were only 3 builders, how long would it take to build the same house?

L Deans
Peebles High School

Recording Measurements from a Scale
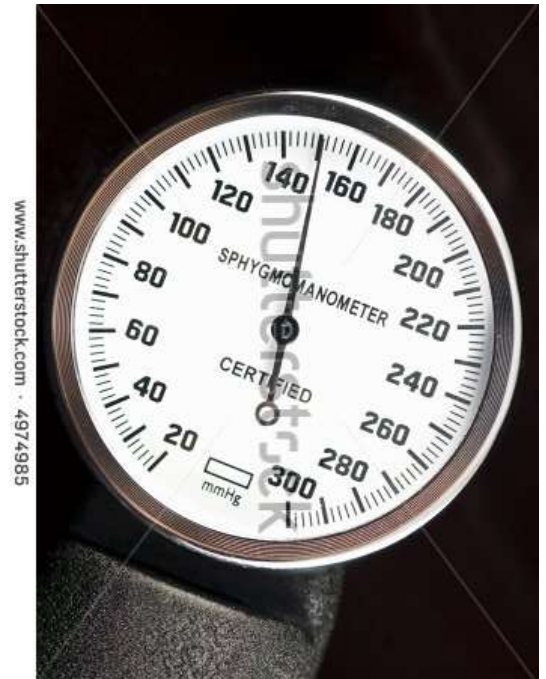
34.   State the pressure in psi on the pressure gauge.

37.   State the temperature in Fahrenheit.


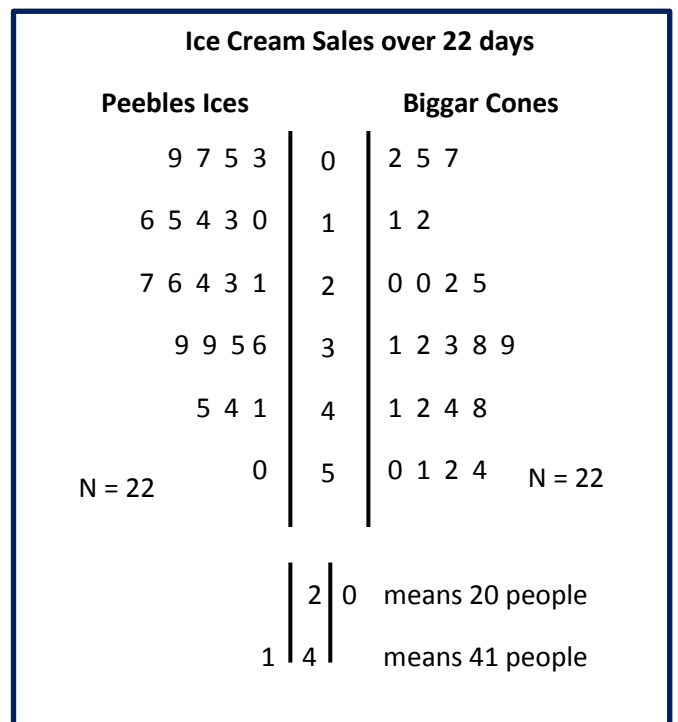35.   State the upper blood pressure in mmHg.

Data Revision

Extracting Information from Data

38.   Using the scatter graph below, answer the following questions:

(a)   What is the likely test mark if a pupil was on facebook for (i) 6 hours (ii) 1 hour (iii) 3 hours?

(b)   How many hours is a pupil likely to be on facebook if they got (i) 65% (ii)   90% (iii)12%

(c)   Write down the correlation between Facebook hours per day and test marks.

(d)   State the hours and test marks of (i)   Laura   (ii)   Joe.

Test marks vs Facebook Hours
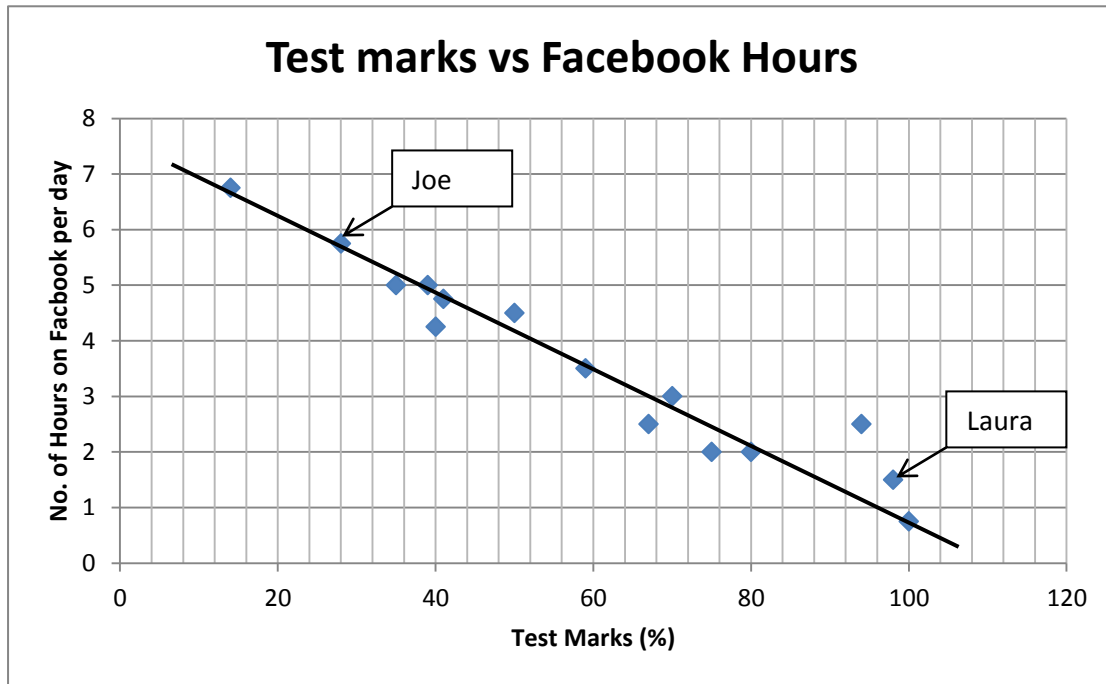
39.   Use the stem-and-leaf diagram to answer the following questions

(a)   State the highest and lowest number of ice creams sold by each company.

(b)   Calculate, using a calculator, the mean number of ice creams sold by each company.

(c)   The median of ice creams sold by Peebles Ices was 23.5 ice creams. By using this and the median of Biggar Cones, compare the two companies.

(d)   In one week Biggar Cones sold 31, 41, 32, 25, 5, 48. Give one reason as to why there was such a low number sold on the Friday.

Ice Cream Sales over 22 days

Peebles Ices		Biggar Cones
9 7 5 3	0	2 5 7
6 5 4 3 0	1	1 2
7 6 4 3 1	2	0 0 2 5
9 9 5 6	3	1 2 3 8 9
5 4 1	4	1 2 4 8
0	5	0 1 2 4

N = 22   N = 22

2 | 0   means 20 people

1 | 4   means 41 people

L Deans
Peebles High School

40. A graph is shown of the employment status of people by age group. Use the graph to answer the following questions.

Employment Status by Age

(a) What percentage of people are in work in the age group (i) 18 – 25 (ii) 50-57?

(b) What percentage of people are in education in the age group (i) under 18 (ii) 26 – 33?

(c) Which age group has the most people job seeking?

(d) Give a type of employment status that could fall into the "Other" category?

41. To the right is a table showing weight against height.

(a) If Sarah had a height of 5' 5, state a weight in kg which would mean she is in the healthy weight.

(b) James weighs 100 kg and is 192 cm tall. Which category does he fall into?

(c) Sarah is 170 cm tall and weighs 120 kg. How much weight does she need to lose to be in the healthy weight category?

(d) Peter is 5' 9 and weighs 50kg. His doctor has told him he must gain 5 kg to put him into the healthy weight category. Is his doctor correct?
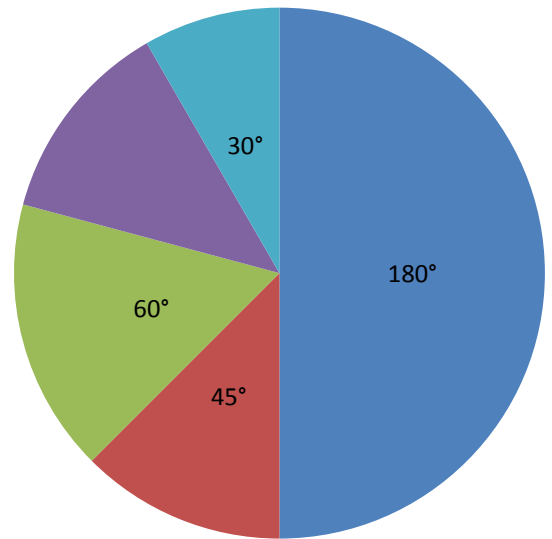
L Deans
Peebles High School
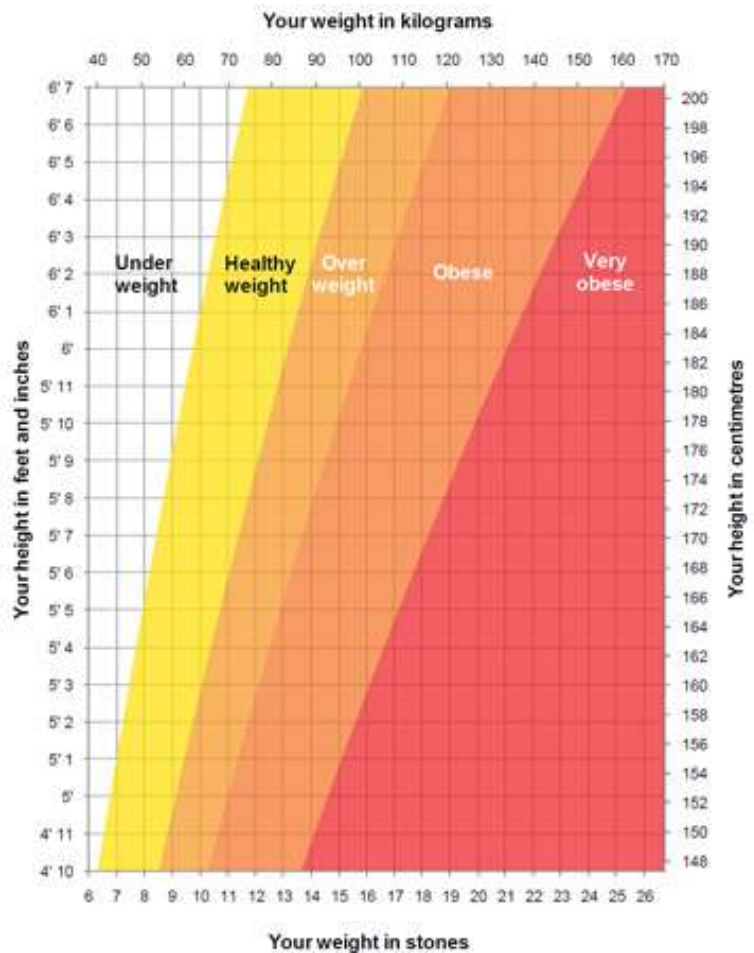
42. The two pie charts show the activities completed by pupils on S1 Residential in 2014 and 2015.

152 pupils went to residential in 2014 and 144 went in 2015

Activities in 2014
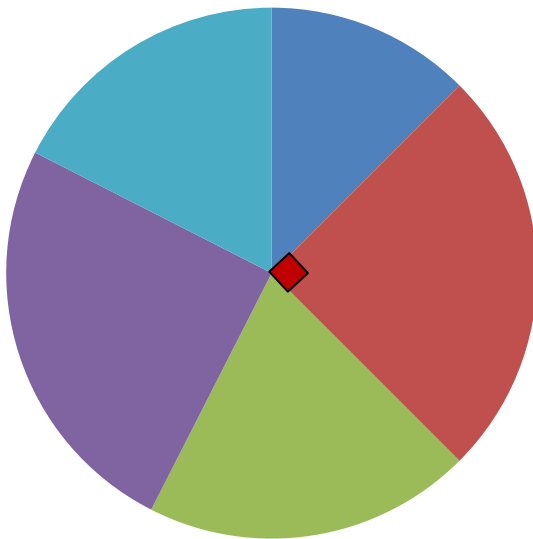
- Jetty Jump
- Climbing
- Canoeing
- Kayaking
- Sailing

Activities in 2015

(a) Calculate the number of pupils who went climbing in 2014.

(b) Calculate the number of pupils who went kayaking in 2015.

(c) In 2015, one third of those who did the jetty jump also complete the high wall. How many pupils complete the high wall?

(d) In 2014, 16 members of staff went to residential and 14 completed the overnight camp. In 2015, 14 members of staff went to residential and 13 completed the overnight camp.

Which year had the highest percentage of staff completing the overnight camp?
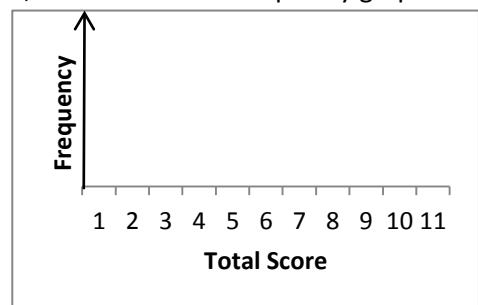
Probability

43. Which of these cannot be a probability   23%   0·541   1·5 $\frac{3}{4}$ $\frac{2}{3}$ 50%

44. If you toss a coin 3 times, what it the probability of getting 3 heads?

45. If you spin this spinner twice, what is the probability of getting a total larger than 4?

46. If you spin this spinner twice 35 times, how many times would you expect to get a total of 5?

47. When you spin this spinner twice a large number of times, what would the frequency graph look like?

Use the frequency graph shown ->

48.   Here is a table showing a survey of weight in 120 people.
       What is the probability that (a) a man surveyed is normal weight?
                                    (b) a person surveyed is an overweight
                                         woman?

	Normal Weight	Overweight
Women	28	33
Men	19	40