Intermediate Diagnostic test for Number

1. Use a calculator to work out $\sqrt{56}$
   a) write down your answer _____
   b) round your answer to 2 decimal places
   c) round your answer to 2 significant figures

2. Put these fractions in order of size, starting with the smallest

$\frac{1}{2}$, $\frac{2}{5}$, $\frac{3}{11}$, $\frac{8}{11}$ ----------

3. Put these decimals in order of size, starting with the largest

34.567 45.568 34.4002 34.399999 _____

4. Estimate the answer to

$\frac{39.5 \times 9.9}{8.1}$ You MUST show your working

5. Work out the price of a car originally costing £3000, if I am offered a 15% discount off that price.

6. Work out

a) $\frac{2}{5} + \frac{3}{8}$

b) $\frac{2}{3} - \frac{4}{15}$

c) $\frac{3}{5} \times \frac{6}{7}$

d) $\frac{2}{9} \div \frac{3}{5}$

7. I buy a 1 kg bag of flour for 43p. A special offer tells me that I can buy 3 bags of 500grams of flour for the price of 2. These cost 30p each.
Which deal offers better value for money?
Show your working.

8. a) Express 100 as a product of its primes

b) express 128 as a product of its primes

c) find the highest common factor of 100 and 128

9. Two students share £81 in the ratio 4:5. How much do they each get?

1st student_____ 2nd Student_____

10 . Work out :

a) 5^3= b) 2^7= c) $\sqrt[3]{27}$ d) 3.4×10^3

11.Work out the following, giving your answer in standard form:

a) $2.3 \times 10^4 \times 4.8 \times 10^3$

b) $3.4 \times 10^2 + 4.5 \times 10^3$

12.A bag cost £23. It had increased 10% in price since the previous year. How much had it cost the previous year?

13. Sam scores 20 out of 26 in a test. Write this score as

a) a fraction in its lowest terms

b) a percentage

14.Work out the cost of 53 bags of potatoes at £ 2.12 a bag.

15. If I spend £67.84 on potatoes how many bags did I buy?

16. Express in the form $a\sqrt{b}$:

a) $\sqrt{28}$

b) $5\sqrt{3} + 2\sqrt{75}$

c) $\frac{5}{3\sqrt{2}}$

Simplify:

d) $\frac{4+\sqrt{5}}{4-\sqrt{5}}$

17. Express 0.4567567567.. as a fraction

18. Fred invests £450 for 25 years at 3% pa
How much will he have after the 25 years?