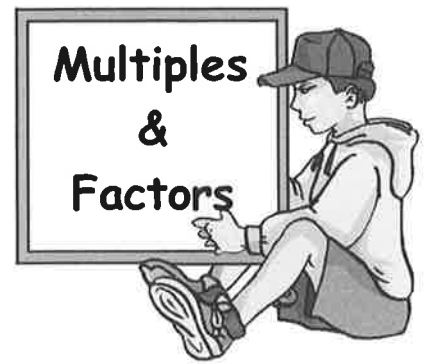


CHAPTER 3



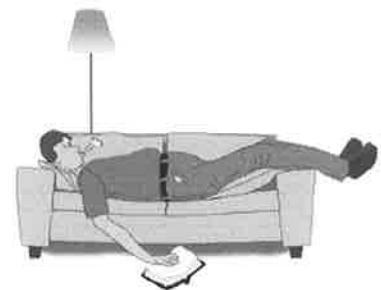
Review 2


Rounding & Whole Numbers

- Round each of the following to one decimal place :-
 - 7.6548
 - 17.6517
 - 119.0765
 - 1543.999.
- Round each number in question 1 to :-
 - two decimal places.
 - one significant figure.
 - two significant figures.
 - three significant figures.
- Rounded to **2 significant figures**, the number of seeds in a bag was **25 000**.
What was the **greatest** number of seeds there could have been in the bag ?
- Find **without** using a calculator :-
 - 43×30
 - 152×400
 - 407×8000
 - $6800 \div 40$
 - $350\,000 \div 7000$
 - $18\,400 \div 200$
 - $19 - 5 \times 3$
 - $40 - 8 \div (6 - 2)$
 - $18 + 10 \div 4.$
- Write down when the next two leap years will occur.

You may use a calculator for questions 6 to 8.

- My new suite was priced £2750 in the showroom.
I paid it up monthly as follows :-
 - an initial payment of 10% of the cost price,
 - followed by 24 monthly payments of £120.17.How much less would it have cost me if I'd paid cash ?



-  A bottle of water holds 750 millilitres.
 - How many full bottles can be filled from a 46 litre tank ?
 - How many millilitres are left over ?

- At the local football match I paid £5.70 for 1 pie and 4 Bovrils.
2 pies and 2 Bovrils would have cost £6.
How much will someone pay for 1 pie and 2 Bovrils ?



Exercise 1

Multiples & Lowest Common Multiples (l.c.m.)



- Write down all the multiples of 4 between 30 and 50.
 - Write down all the multiples of 7 between 30 and 65.
- List the first ten multiples of 3 and the first 10 multiples of 4.
 - List the **common multiples** of 3 and 4.
 - What is the l.c.m. of 3 and 4?
- Find the l.c.m. of each of the following pairs of numbers :-
 - 2 and 3
 - 8 and 6
 - 3 and 7
 - 5 and 8
 - 10 and 12
 - 3 and 11
 - 8 and 9
 - 6 and 9.
- Find the l.c.m. of :-
 - 2, 3 and 4
 - 3, 5 and 9
 - 2, 7 and 9.
- 3 disco lights are set off at the same time and then flash at different intervals :-
 - the blue light flashes every 5 seconds.
 - the green light flashes every 6 seconds.
 - the red light flashes every 8 seconds.

After they flash at the start, how long will it be until they flash together again?



Exercise 2

Factors & Highest Common Factor (h.c.f.)



- Find all the factors of :-
 - 10
 - 18
 - 23
 - 24
 - 72
 - 100.
- List **all** the factors of 18 and all the factors of 24.
 - Make a list of the common factors of 18 and 24. (those that appear in both lists).
 - What is the **highest common factor** (or h.c.f.) of 18 and 24.
- Find the highest common factor (h.c.f.) for each of the following :-
 - 12 and 15
 - 28 and 35
 - 24 and 96
 - 37 and 41
 - 100 and 105
 - 199 and 200.
- Find the h.c.f. of :-
 - 12, 15, 21
 - 24, 36, 40.
- Write down all the factors of 360.

Exercise 3 Prime Numbers

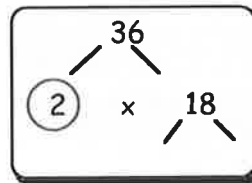


- Write all the factors of 15. Why is 15 **not** a prime number ?
 - Explain why the number 1 is **not** a prime number.
 - Explain why 13 is a prime number.
- State whether each number below is a **prime** number or not. (Write **yes** or **no**) :-
 - 5
 - 16
 - 15
 - 17
 - 23
 - 27
 - 29
 - 35
 - 44
 - 47
 - 51
 - 62.
- How many **even** numbers are **prime** ?
- Write down all the prime numbers between 50 and 60.

Exercise 4 Prime Decomposition



- Copy and complete the prime factor tree shown.



$$36 = 2 \times \dots \times \dots$$

- Use a similar method to find the prime decomposition of the following numbers :-
 - 12
 - 50
 - 27
 - 80
 - 56
 - 88
 - 35
 - 110
 - 155
 - 345
 - 1000
 - 256.

Revisit - Review - Revise 3



- Write down the **lowest common multiple** (l.c.m.) of :-
 - 4 and 9
 - 12 and 20
 - 11 and 37
 - 3, 5 and 6.
- Write down the **highest common factor** (h.c.f.) of :-
 - 20 and 28
 - 110 and 85
 - 21, 49 and 84.

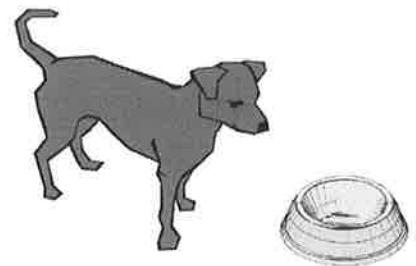
- How many **factors** does a **prime** number have ?
- Write down **all** the **prime** numbers between :-
 a 10 and 20 b 40 and 50 c 90 and 110.
- Write down why each of these numbers are definitely **not prime** numbers :-
 a 111114 b six million c 77777.
- Write down the **highest common factor** (h.c.f.) of :-
 a 10 and 15 b 24 and 26 c 15 and 75 d 12, 28 and 48.
- Write each of the following numbers as a **product** of its **prime factors** :-
 (For example, $18 = 2 \times 3 \times 3$ and $50 = 2 \times 5 \times 5$).
 a 20 b 72 c 125 d 1200.

Cumulative Ex 1



- Find the **area** of a square with side :-
 a 9 mm b 11 cm c 1.5 m.
- Find :-
 a 3^2 b 8^2
 c 6^2 d 12^2 e 100^2
 f 2^3 g 3^4 h 10^5
 i 2^8 j $(-1)^{21}$ k $\sqrt{64}$
 l $\sqrt{100}$ m $\sqrt{1}$ n $\sqrt{1000000}$
 o $\sqrt[3]{1000}$ p $\sqrt[3]{8}$ q $\sqrt[3]{27}$.

- Bingo dog food comes in 2 sizes.
 - the small 350 g tin costs £1.40
 - the 1 kg tin costs £4.60.
 a How much does it cost per 50 g for each size ?
 b Which is better value ? Explain.

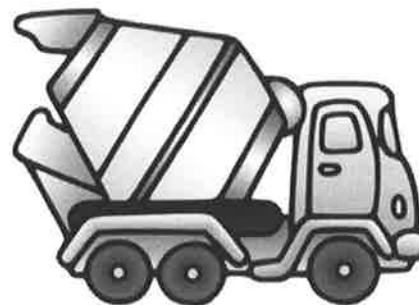


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Which is the best liquid soap buy here :-
 The 100 ml bottle, the 250 ml or the 550 ml bottle ?
 Explain.

5. I need to hire a cement mixer to pave my garden.
I estimate it will need to be hired for 4 hours.

- **CM-Hire** charge a basic hiring fee of £20 plus £8.50 per hour after that.
- **Mixers-For-Hire** don't charge any basic fee but their rental charges are £15 per hour.



- a Which company should I hire it from? (*Explain*).
- b It actually takes me 8 hours to pave my garden.
Would I have been better hiring it from the other company? (*Explain*).

6. Write down the **lowest common multiple** (l.c.m.) of :-

- a 4 and 7 b 10 and 15 c 9 and 12 d 2, 3 and 5.

7. Write down the **highest common factor** (h.c.f.) of :-

- a 12 and 20 b 120 and 36 c 35, 49 and 70 d 13, 19 and 29.

8. Write down **all** the **prime** numbers between :-

- a 20 and 30 b 50 and 60 c 100 and 110.

9. Write each of the following numbers as the **product** of **prime factors** :-
(For example, $18 = 2 \times 3 \times 3$ and $50 = 2 \times 5 \times 5$).

- a 24 b 36 c 180 d 2400.

You may use a calculator for questions 10 to 12

10. a How many Euros would I get for £450 at an exchange rate of 1.25€ to the £ ?
b How many dollars would I get for £1260 at a rate of \$1.62 to the £ ?
c How many Yen would I get for 24 000 Baht if 1 Yen = 0.39 Baht ?

11.



I bought myself a new conservatory costing £6780.
I took out an HP contract agreement where I paid a 20% deposit and £238 a month for two years.
How much would I have saved if I had paid cash ?

12. I bought a car for £2600 and sold it for £2850.

Find my profit and express it as a percentage of the original cost price.