Name: _____

1. Work out :

(a) 347.6 + 19.47

$$\begin{array}{r} 347.6 \\ +\ 19.47 \\ \hline 367.07 \\ {\scriptstyle 1\ 1} \end{array}$$

Ans (a) 367.07

(b) 20.03 – 5.8

$$\begin{array}{r} {\scriptstyle 19\ 1} \\ 20.03 \\ -\ 5.8 \\ \hline 14.23 \end{array}$$

Ans (b) 14.23

2. Work out :

(a) 7.46 × 3.8

$$\begin{array}{r} 746 \\ \times\ 38 \\ \hline 5968 \\ 22380 \\ \hline 28348 \\ {\scriptstyle 1\ \ 1} \end{array}$$

Ans (a) 28.348

(b) 15.04 ÷ 8

$$\begin{array}{r} 1.88 \\ \hline 8 \overline{)\ 15.^{7}0^{6}4} \end{array}$$

Ans (b) 1.88

3. Write down the next two numbers in each of the following sequences :

(a) 2, 6, 10, 14

Ans 18, 22

(b) 1, 2.25, 3.5, 4.75

Ans 6, 7.25

(c) 22, 16, 10, 4

Ans -2, -8

(d) 2, 5, 10, 17, 26

Ans 37, 50

4. Work out the following :

(a) 10 % of £230

Ans £23

(b) 25 % of £60

Ans £15

(c) 15 % of £60

10% is £6
5% is £3

Ans £9

(d) $27\frac{1}{2}$ % of £84

10% is £8.40
5% is £4.20
2.5% is £2.10.

20% is £16.80.

16.80 + 4.20 + 2.10

Ans £23.10

5. **Work out the following :**

(a) $3-6$ Ans.....-3.....

(b) $-4+(-3)=$ Ans.....-7.....

(c) $-2-5$ Ans.....-7.....

(d) $7-(-2)$ Ans.....9.....

(e) $-6+?=-9$ Ans.....-3.....

(f) $3-?=6$ Ans.....-3.....

(g) $?-(-3)=-1$ Ans.....-4.....

(h) 5×-3 Ans.....-15.....

(i) -6×-4 Ans.....24.....

(j) $-18\div6$ Ans.....-3.....

(k) $-4\times(-6+3)$ Ans.....12.....

-4x -3

(l) $?\div(-5-2)=-3$ Ans.....21.....

? ÷ -7 = -3

6. **Simplify the following expressions**

(a) $7x + 3y + 2x + 5y$

Ans..... $9x + 8y$

(b) $3x - 2y + 5y - 2x$

Ans..... $x + 3y$

(c) $-7x - 5y + 4x + 3y$

Ans..... $-3x - 2y$

7. **If 7 plants cost £63 find the cost of 5.**

1 plant $63 \div 7 = £9$

5×9

Ans..... £45

8. **£72 is to be shared between Andy, Bandy and Candy in the ratio of 2 : 4 : 3. How much does each receive ?**

$2 + 4 + 3 = 9$

$72 \div 9 = 8.$

Andy 16

Bandy 32

Candy 24

9. Work out the following :

(a) $\frac{3}{8}+\frac{1}{4}$ $= \frac{3}{8} + \frac{2}{8} = \frac{5}{8}$

Ans.....

(b) $2\frac{3}{5}+1\frac{1}{4}$ $= \frac{13}{5} + \frac{5}{4}$

$= \frac{52}{20} + \frac{25}{20} = \frac{77}{20} = 3\frac{17}{20}$

Ans.....

(c) $3\frac{4}{5}-1\frac{1}{2}$ $= \frac{19}{5} - \frac{3}{2}$

$= \frac{38}{10} - \frac{15}{10} = \frac{23}{10} = 2\frac{3}{10}$

Ans.....

(d) $4\frac{1}{8}-2\frac{5}{6}$ $= \frac{33}{8} - \frac{17}{6}$

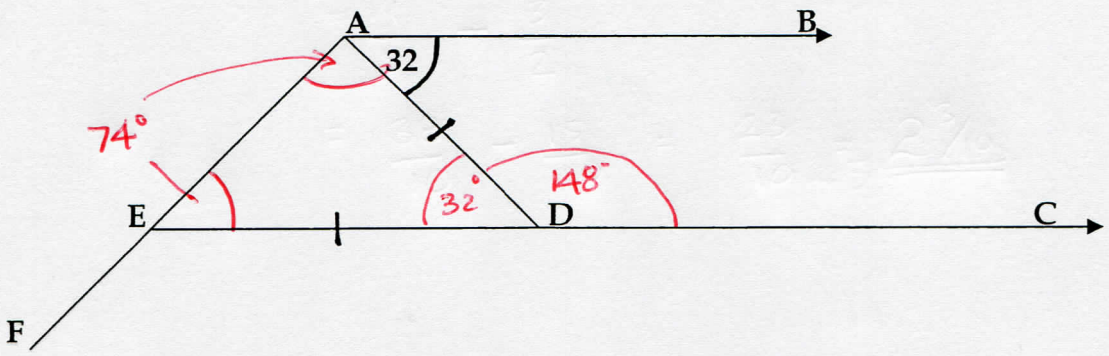
$= \frac{99}{24} - \frac{68}{24} = \frac{31}{24} = 1\frac{7}{24}$

Ans.....

10. Complete the following table writing all the fractions in their simplest form :

Decimal	Fraction	Percentage
0.3	$\frac{3}{10}$	30%
0.25	$\frac{1}{4}$	25%
0.4	$\frac{4}{10} = \frac{2}{5}$	40 %
1.3	$1\frac{3}{10}$	130%
0.075	$\frac{75}{1000} = \frac{3}{40}$	7.5 %

11. In the diagram AB is parallel to DC , AD=DE and angle BAD = 32 degrees.
Find the following angles stating a reason for each :



Angle $\hat{ADE}$ = ...32°....

Reason....Alternate angles are equal....

Angle $\hat{CDA}$ = ...148°....

Reason....Angles on a straight line add up to 180°....

180 - 74

Angle $\hat{DEF}$ = ...106°....

Reason....Isosceles triangle and Angles on a straight line....

12. **Plot the following straight lines on the grid below by first filling in the given tables which will provide the coordinates to be plotted.**

(One has been done for you in each case.)

(i)

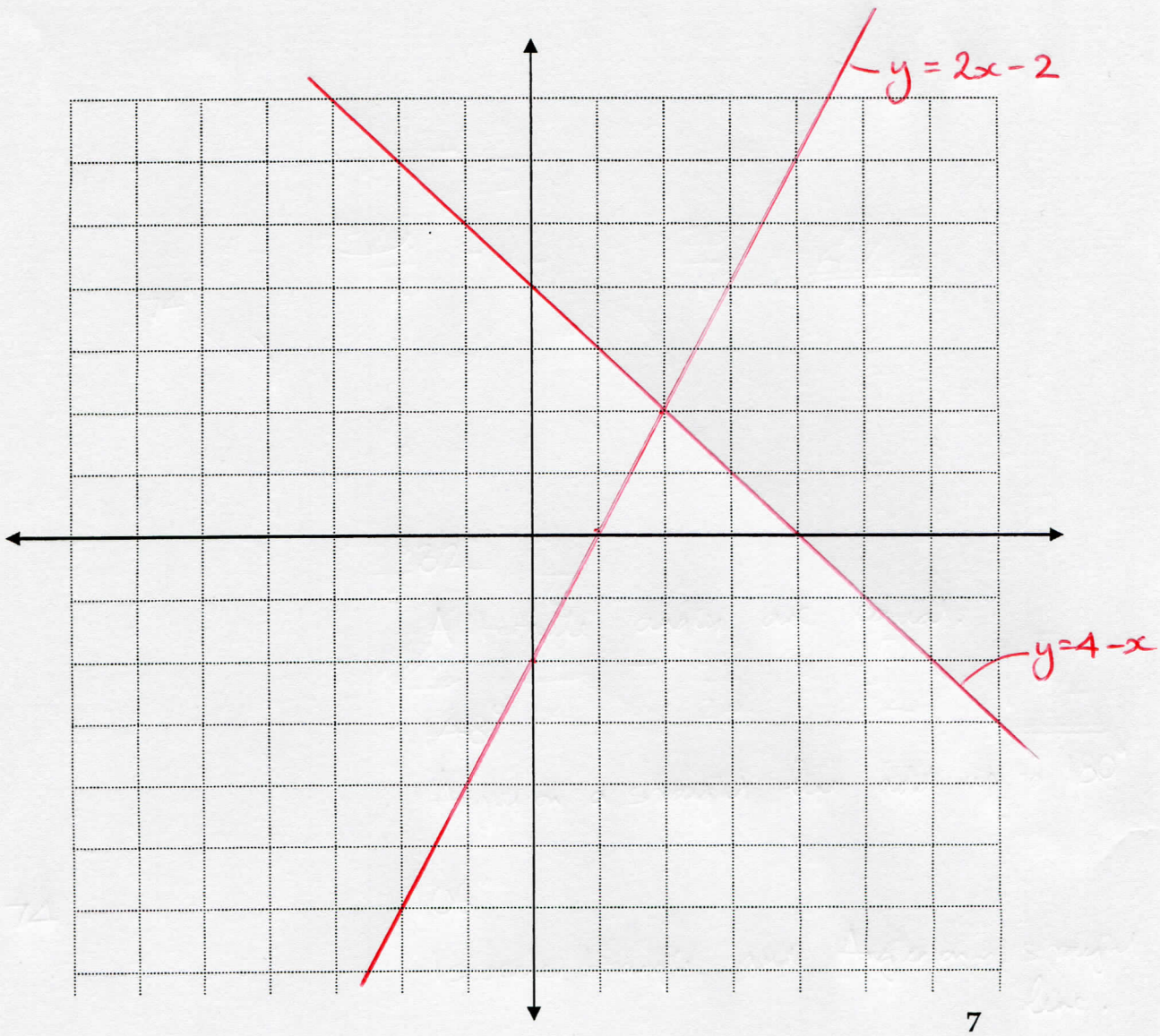
x	-2	-1	0	1	2
y	-6	-4	-2	0	2

$y = 2x - 2$

(ii)

x	-2	-1	0	1	2
y	6	5	4	3	2

$y = 4 - x$



13. Solve the following equations :

(a) $x - 4 = 6$

Ans..... $x = 10$

(b) $3x = 12$

Ans..... $x = 4$

(c) $\frac{x}{5} = 5.5$

Ans..... $x = 27.5$

(d) $13 + 2x = 9$ $2x = -4$

Ans..... $x = -2$

(e) $2.2x - 3.4 = 7.6$

$2.2x = 11$

Ans..... $x = 5$

14. (i) If the first number of three consecutive numbers is x write down the other two in terms of x:

Ans..... $x+1$

Ans..... $x+2$

(ii) *The sum* of three consecutive numbers is 162. Write down an equation and solve it to find the three numbers.

$$x + x+1 + x+2 = 162$$

$$3x + 3 = 162$$

$$3x = 159$$

$$x = 53$$

Ans..... 53, 54, 55

15. A sequence of numbers is given by the formula

" multiply by the term number by 4 and add 3 "

a. Write down the first and second terms.

Ans..... 7 ... . 11 .....

b. Which term has a value of 87 ?

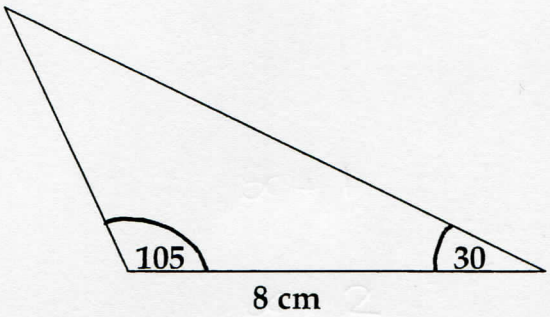
$$4n + 3 = 87$$

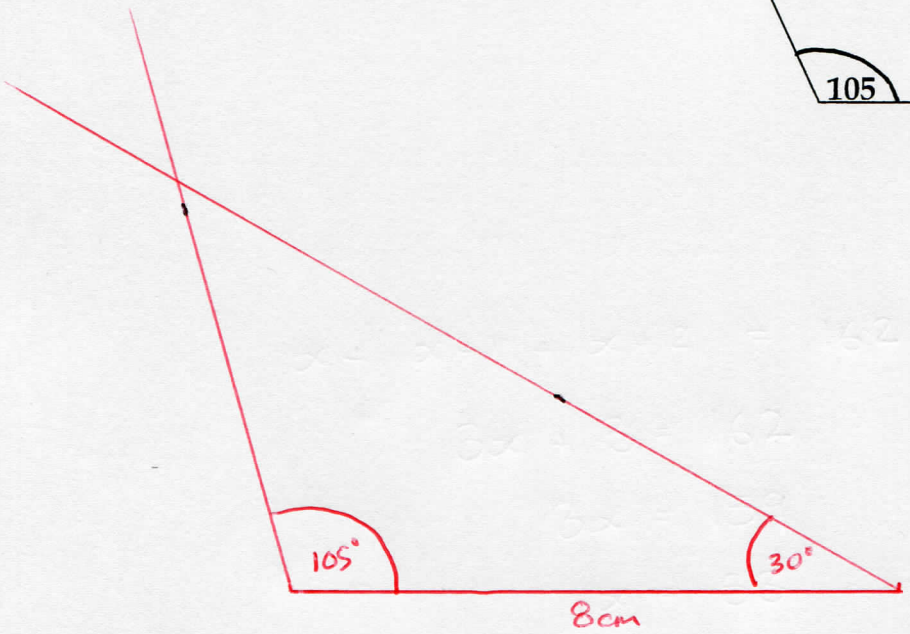
$$4n = 84$$

$$n = 21$$

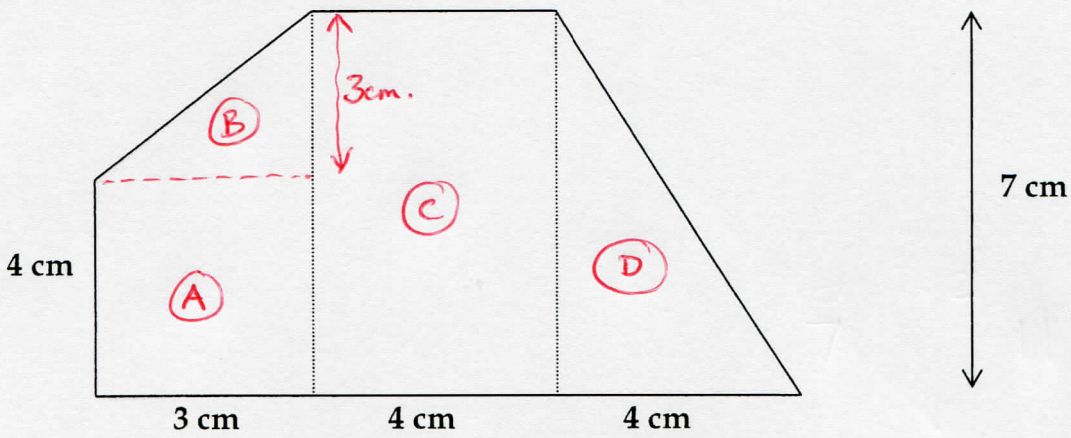
Ans..... 21st .....

16. Draw accurately this triangle below.





17. Find the area of this shape :



Area (A) $4 \times 3 = 12\text{cm}^2$

Area (B) $\frac{1}{2} \times 3 \times 3 = 4.5\text{cm}^2$

Area (C) $4 \times 7 = 28\text{cm}^2$

Area (D) $\frac{1}{2} \times 4 \times 7 = 14\text{cm}^2$

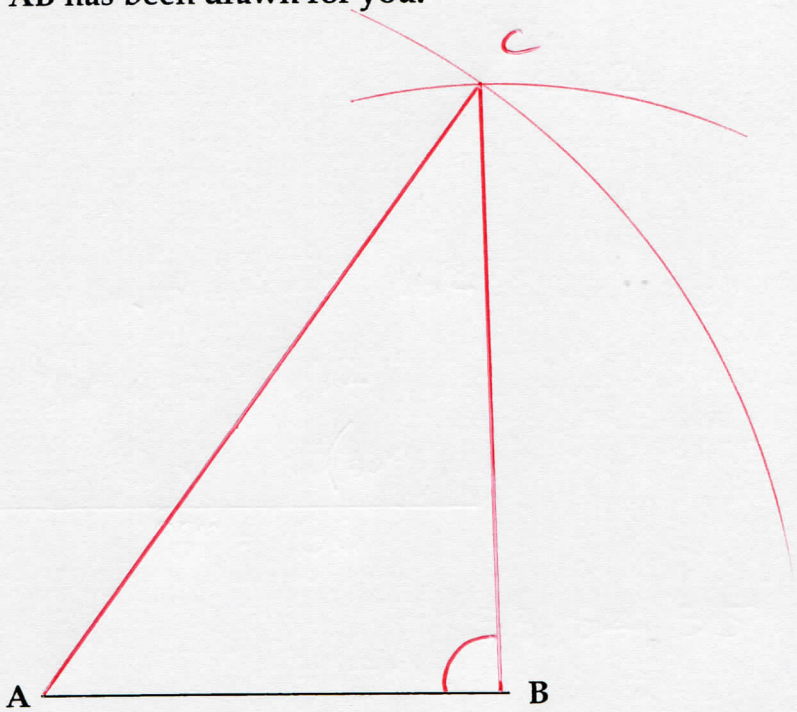
58.5cm^2

Ans..... 58.5cm^2

18. Construct a triangle ABC whose side lengths are

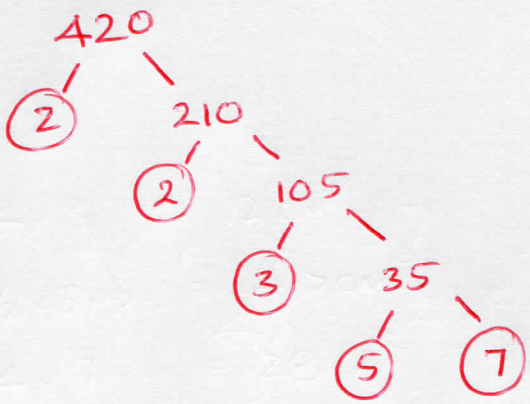
AB = 6cm, BC = 8cm , AC = 10cm

making sure to show all construction lines and measure the angle ABC. AB has been drawn for you.



$\hat{ABC}$ = ... 90° (Accept 89°-91°)

19. Using a factor tree, *or otherwise*, write out the number 420 as prime numbers multiplied together.



$2 \times 2 \times 3 \times 5 \times 7$

or $2^2 \times 3 \times 5 \times 7$

Ans.....

20. (a) Write down the factors of 36

Ans... 1, 2, 3, 4, 6, 9, 12, 18, 36

(b) Write down the factors of 54

Ans... 1, 2, 3, 6, 9, 18, 27, 54

(c) What is the HCF of 36 and 54 ?

Ans... 18

21. (a) Write down the first five multiples of 15

Ans... 15, 30, 45, 60, 75

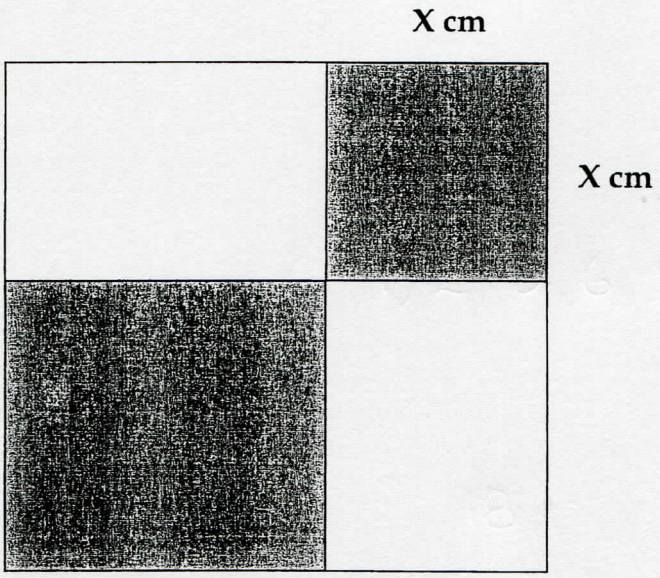
(b) Write down the first five multiples of 12

Ans... 12, 24, 36, 48, 60

(c) What is the LCM of 12 and 15 ?

Ans... 60

22. **A large square is divided into two smaller shaded squares and two unshaded rectangles as pictured below.**
If the ratio of the shaded area to the unshaded area is 5 : 3 and the area of the whole shape is 144 cm², find the length X which is a whole number.



$5+3=8$

$144 \div 8 = 18$

$5 \times 18 = 90\ cm^2$

number of parts for shaded

Since the two shaded areas are squares, we need 2 numbers which, when squared add together to give 90 and when simply added, give 12

$3+9=12$

$3^2+9^2=90.$

Ans X = 3cm or 9cm.