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Level F Homework 1

1. Calculate:

- (a) $-5+3$ (b) $-8-5$
(c) $-8+(-9)$ (d) $-3-(-12)$
(e) $14+(-29)$ (e) $-15-(-50)$

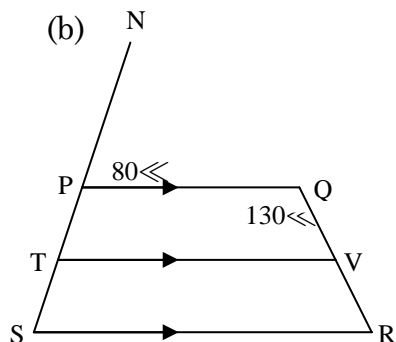
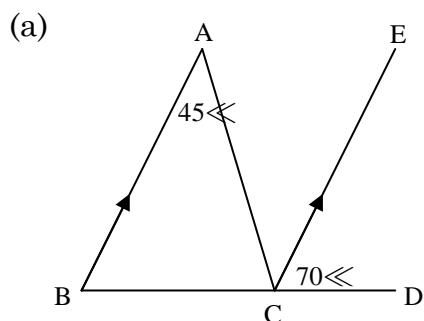
2. Calculate the following given that $x = 3$, $y = -5$:

- (a) $x+2y$
(b) $x^2 - y + (-5x)$
(c) $-(y^2)$

3. Calculate:

- (a) $10 \times (10 - 15)$ (b) $((-4) - 11) \div 3$
(c) $((-10) + 4) \div (-3)$ (d) $(-3)^3$

4. Copy these diagrams and fill in all the angles.





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Level F Homework 2

1. Remove the brackets:

(a) $3m(2m-3)$

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

2. Remove the brackets and Simplify:

(a) $3(x+4)-4x(3x-3)$

(b) $7q-3(3-3q)$

3. Work out:

(a) $57.24-8.98$

(b) $34.1-7.287-15.02$

(c) $9 \times (-2.6)$

(d) $(-0.8) \times (-30)$

(d) $(-4.5) \div (-300)$

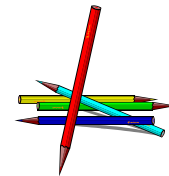
(d) 5.2×3000

4. A colouring pencil costs £0.09. What is the cost of:-

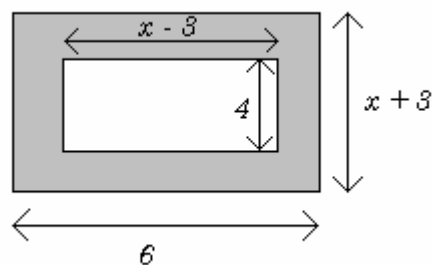
(a) 8 pencils

(b) 300 pencils

(c) 2000 pencils ?



5. Find the shaded area in terms of x :



6. Factorise:

(a) $6a-18$

(b) $4q^2+12qr$

(c) $6kp-4k^2+2p^2$

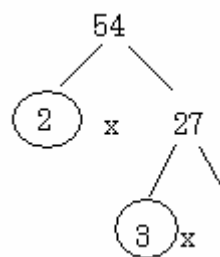


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Level F Homework 3

1. Find the highest common factor for each of the following: -

- (a) 12 and 20 (b) 13 and 26 (c) 24 and 36

2. (a) Copy and complete the following factor tree:



(b) Use a similar method to find the prime decomposition of the following:

- (i) 36 (ii) 50 (iii) 98

3. Calculate:

(a) $2\frac{3}{7} + 5\frac{1}{9}$

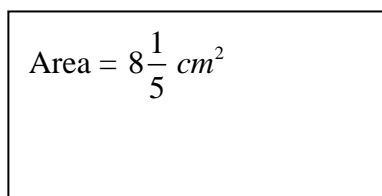
(b) $6\frac{1}{3} - 2\frac{3}{4}$

(c) $3\frac{1}{2} + 4\frac{2}{7} + \frac{1}{28}$

4. The area of this rectangle is $8\frac{1}{5} \text{ cm}^2$.

Its breadth is $2\frac{1}{4} \text{ cm}$.

Calculate its length.



$2\frac{1}{4} \text{ cm}$

5. A music “jingle” on the radio lasted $12\frac{1}{2}$ seconds.

The new replacement “jingle” lasts $1\frac{1}{4}$ times as long as this.

For how long does the new jingle last?



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Level F Homework 4

1. Write the following in scientific notation:

- (a) 800
- (b) 109
- (c) 2 million
- (d) 0.002
- (e) one tenth
- (f) 0.000521

2. Write each of the following in full:

- (a) 1.7×10^3
- (b) 5.04×10^5
- (c) 8.2×10^{-3}
- (d) 1.0×10^{-4}

3. Copy the following frequency table and add a third column to help you find the mean temperature:

Max. Temp (x)	Frequency (f)
5	7
6	8
7	5
8	2
9	6

4. Copy the table again, but this time add a cumulative frequency column.

5. The mean age of a group of boys was 15.
One more boy joined the group and the mean age became 14.

How old was the ninth boy?



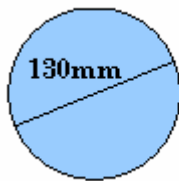
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Level F Homework 5

1. Calculate the shaded areas of each of the following:
(Show all your formulae and working)

(a)

(b)

- 2.



A circle has a diameter of 130 mm.

Calculate the Area.

3. A circular trampoline has a circumference of 10.99 m.

- (a) Calculate the diameter
(b) Calculate the radius
(c) Using the value for the radius, calculate the Area, to the nearest m^2 .

4. Calculate the shaded area:



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Level F Homework 6

1. A tractor bought for £25000 in 2002 has depreciated in value over the past few years.

It is now worth 32% less than the original value.

What is the tractor worth today?



2. From a weekly wage of £280, I pay £67.20 in rent.

What percentage of my wage goes on rent?



3. Michael's annual golf fees have increased by 18% this year. He now has to pay £590.00

Calculate Michael's golf fees for last year.



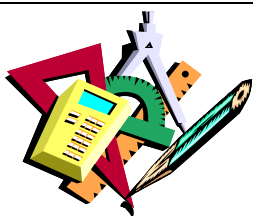
4. Solve each of the following:

(a) $5(x-1) - 3(x-4) = 11$

(b) $3x + 11 \leq 35$

(c) $2(2x+4) \geq 9$

(d) $\frac{1}{8}x - 2 = 1$



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Level F Homework 7

1. The table shows the results of a survey asking people's favourite holiday destination.

America	Italy	France	Spain	U.K	Italy
France	France	Italy	Spain	Italy	U.K
Spain	U.K	Italy	U.K	Spain	Italy
France	France	France	Italy	America	Italy
America	America	U.K	U.K	Italy	Spain
Italy	America	Spain	Italy	France	U.K

- (a) Copy and complete the table below:

Destination	Tally Mark	Number
America		
Italy		
France		
U.K		
Spain		



- (b) Add another column to help you make a pie chart
(c) Construct an accurate pie chart for this information.

2. Three coins are tossed at the same time,

- (a) List all the possible outcomes. (HHH, HHT, etc.)
(b) Find:- (i) P(all heads) (ii) P(2 tails)



3. For each of the following tables, determine a formula in the form $y = \dots x \pm \dots$

x	2	4	6	8
y	1	5	9	

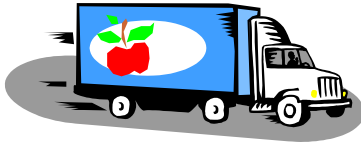
x	10	11	12	13
y	7	8	9	

x	2	4	6	8
y	11	23	35	



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Level F Homework 8

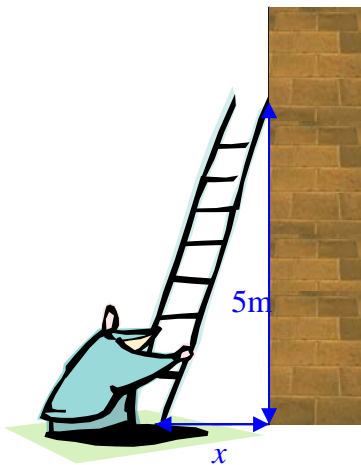
1. At 10am, 3 delivery vans leave the warehouse to supply supermarkets at A, B and C.



Copy and complete the table:

Journey	A	B	C
Time (h)		$3\frac{1}{2}$ h	
Distance (km)	96km		180km
Average Speed (km/h)	48km/h	42km/h	40km/h

2. The length of the ladder below is 5.4m.
Calculate x to 1 decimal place:



3. Plot the following pairs of points and calculate the lengths of the lines joining them:

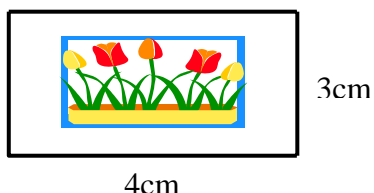
- (a) A(0, 0) and B(8, 6)
- (b) C(1, 2) and D(9, 8)
- (c) T(-1, -1) and U(2, 3)



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Level F Homework 9

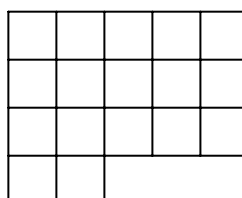
1. Make enlargement OR a reduction of the following shapes using the given scales:

(a)



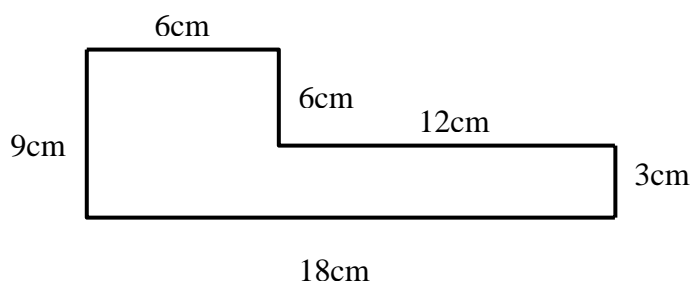
Make a **3 times** enlargement

(b)



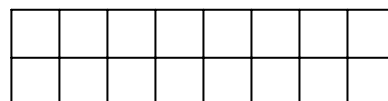
Make a **4 times** enlargement

(c)



Make this **one third** of its size

(d)



Reduce this shape to **half** its size.

2. It takes 12 workmen 3 hours to repair a roof.



How long will it take 9 workmen, working at the same rate?

3. Five pizzas cost £27.50.

How much will 8 pizzas cost?

