

Name \_\_\_\_\_

## Homework 1

### Question 1

Multiply out the brackets:

(a)  $3(a + 2)$

(b)  $10(b - 3)$

(c)  $4(3x + 2)$

### Question 2

Expand brackets and simplify:

(a)  $3(x + 2) + 2$

(b)  $5(x + 4) + 3(x + 1) - 22$

### Question 3

Factorise:

(a)  $4x + 6$

(b)  $10x - 35$

(c)  $x^2 + 5x + 6$

### Question 4

A mechanic uses a formula to work out customers' bills for servicing their cars. The formula is

$$C = 1.2(25t + P) + 32$$

where £ $C$  is the final bill,  $t$  is the time in hours to do the job and £ $P$  is the cost of any parts needed. Calculate the final bill for his car service if  $P = £126.50$  and  $t = 6$  hours.

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### Question 5

The table shows the cost of hiring scaffolding for a number of days:

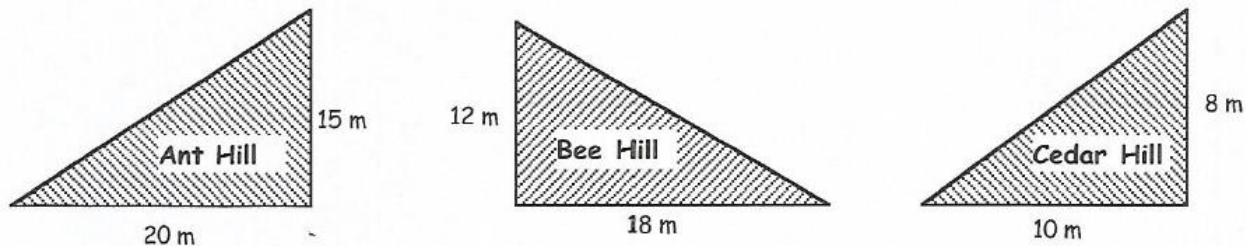
No. of days (D)	1	2	3	4	5	6
Cost in pounds (C)	35	50	65	80	95	110

$\underbrace{\hspace{1.5em}}$      $\underbrace{\hspace{1.5em}}$      $\underbrace{\hspace{1.5em}}$   
            ?            ?            ?

- (a) For each new day the scaffolding is hired, how much more does it cost?
- (b) Write down the formula using **symbols**  $C = \underline{\hspace{2em}} \times D + \underline{\hspace{2em}} ?$
- (c) Use your formula to work out the cost of hiring the scaffolding for a fortnight (14 days).

### Question 6

- (a) Write the gradients of each of the following hills:



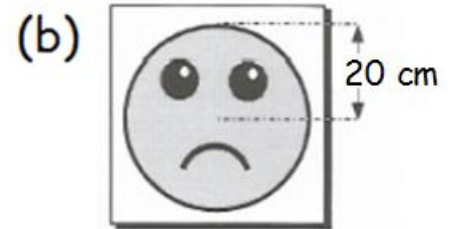
- (b) Change each of your fractional answers in part (a) to a decimal.
- (c) List the gradients in order (steepest first).

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## Homework 2

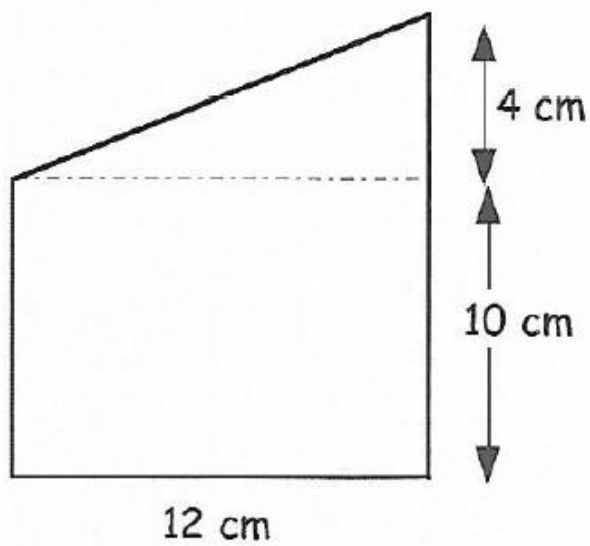
### Question 1

Calculate the circumference and the area of these circles:



### Question 2

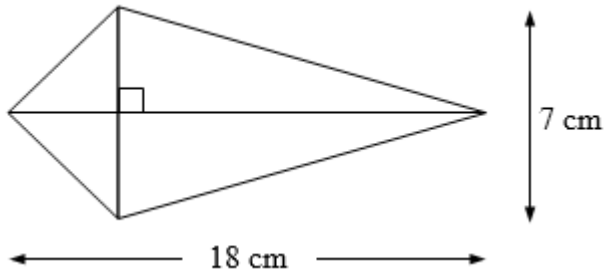
- (a) Calculate the area of a rectangle.
- (b) Calculate the area of a triangle.
- (c) Calculate the **total** area of the shape.



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### Question 3

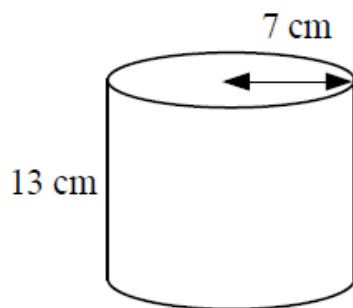
Calculate the area of a kite:



### Question 4

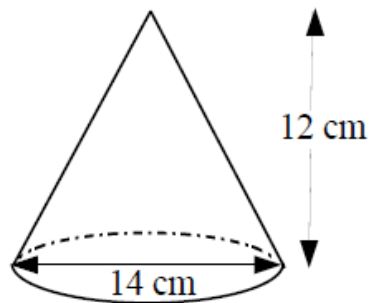
Calculate the volume of:

(a)



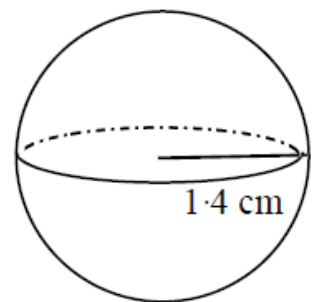
$$\text{Vol}_{(\text{cylinder})} = \pi r^2 h$$

(b)



$$\text{Vol}_{(\text{cone})} = \frac{1}{3} \pi r^2 h$$

(c)



$$\text{Vol}_{(\text{sphere})} = \frac{4}{3} \pi r^3$$