

Name: \_\_\_\_\_



**Measuring**

**Shapes 5**

**Additional Tasks**



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## Quiz 1



1)  $0.3 \times 0.4$

2)  $1 - 0.4$

3)  $2 \div 0.1$

4)  $4^4$

5)  $4^{\frac{1}{2}}$

6)  $4^{-2}$

7) Solve  
 $x^2 = 49$

8) Solve  
 $\frac{x}{2} + 3 = 8$

9) Solve  
 $x^2 + 9x + 14 = 0$

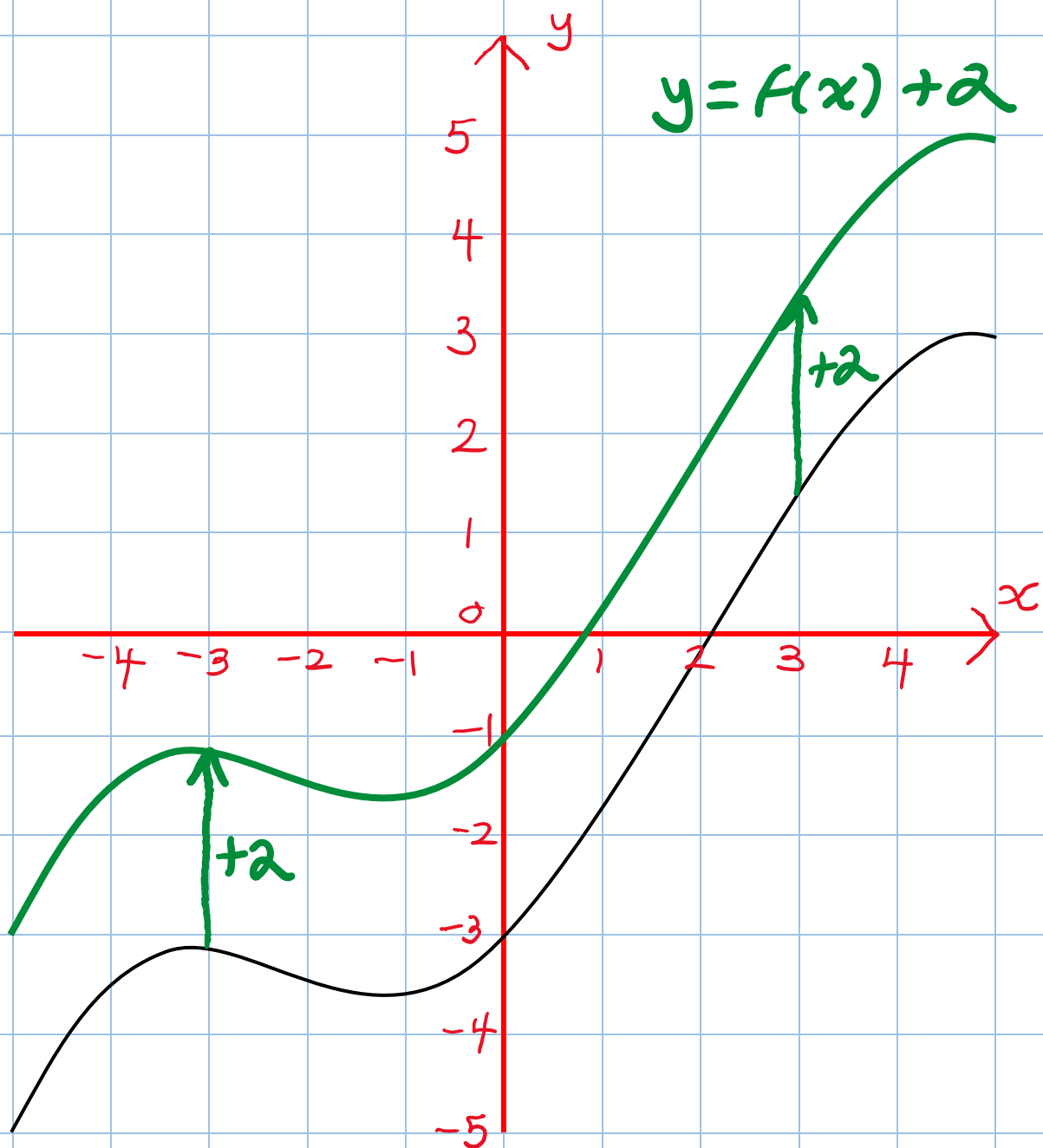
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## Example 1



The following graph shows the function  $y = f(x)$ .  
Draw, on the same set of axes, the function  
 $y = f(x) + 2$ .

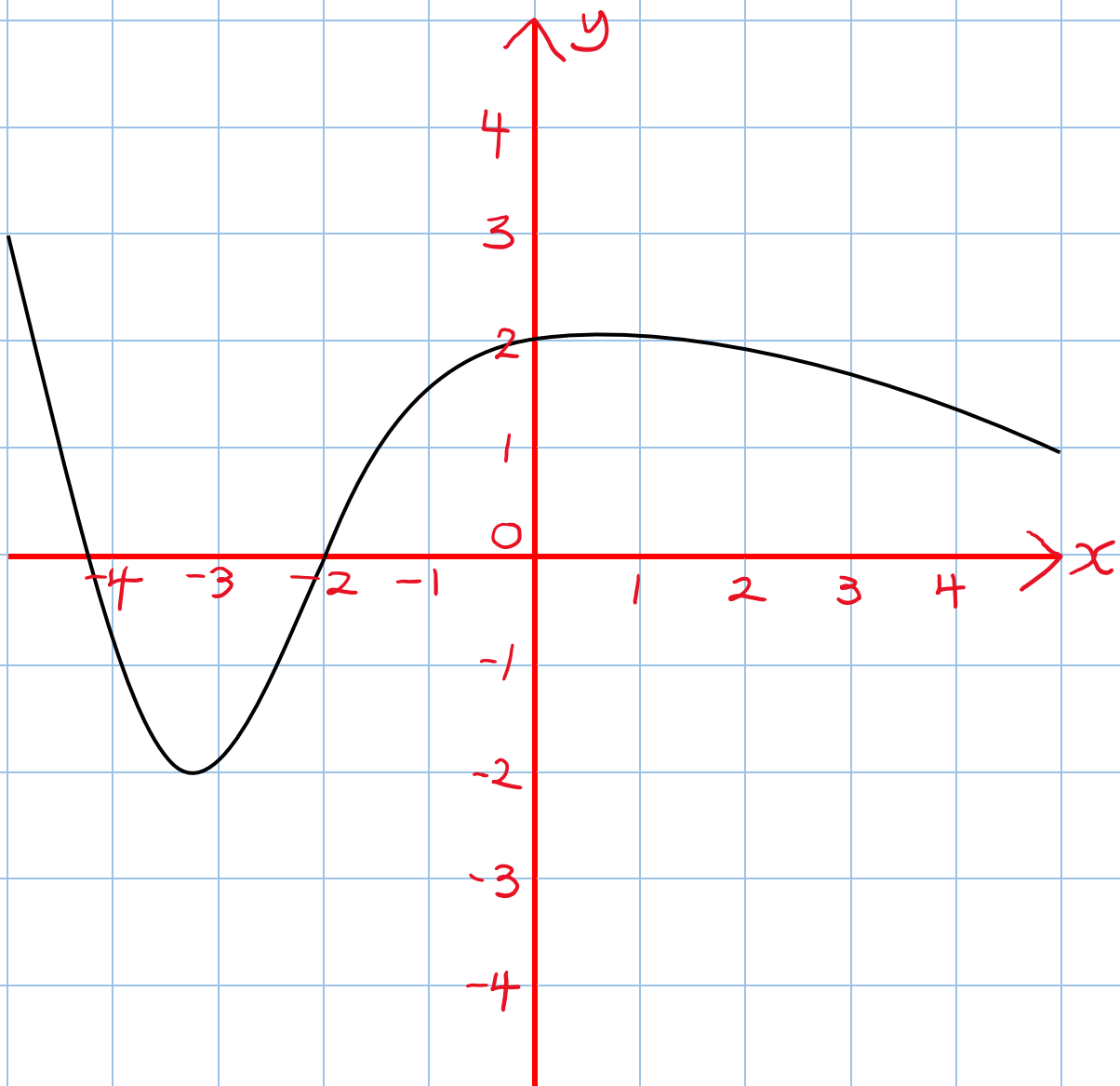




## Exercise 1



The following graph shows the function  $y = f(x)$ .  
Draw, on the same set of axes, the function  
 $y = f(x) - 3$ .



\_\_\_ out of 2



## Quiz 2



1) The rules for proving that two triangles are congruent are the SSS, SAS, \_\_\_\_\_ and \_\_\_\_\_ rules.

2) Solve the inequality  $4x \geq 20$ .

3) The gradient of a velocity-time graph gives the...

4) The height of a cupboard is 45 cm, correct to the nearest cm. What is the greatest possible height of the cupboard?

5) Write 43% as a decimal.

6) Round off 5,852 to 2 significant figures.

7) Write the reciprocal of  $\frac{2}{3}$ .

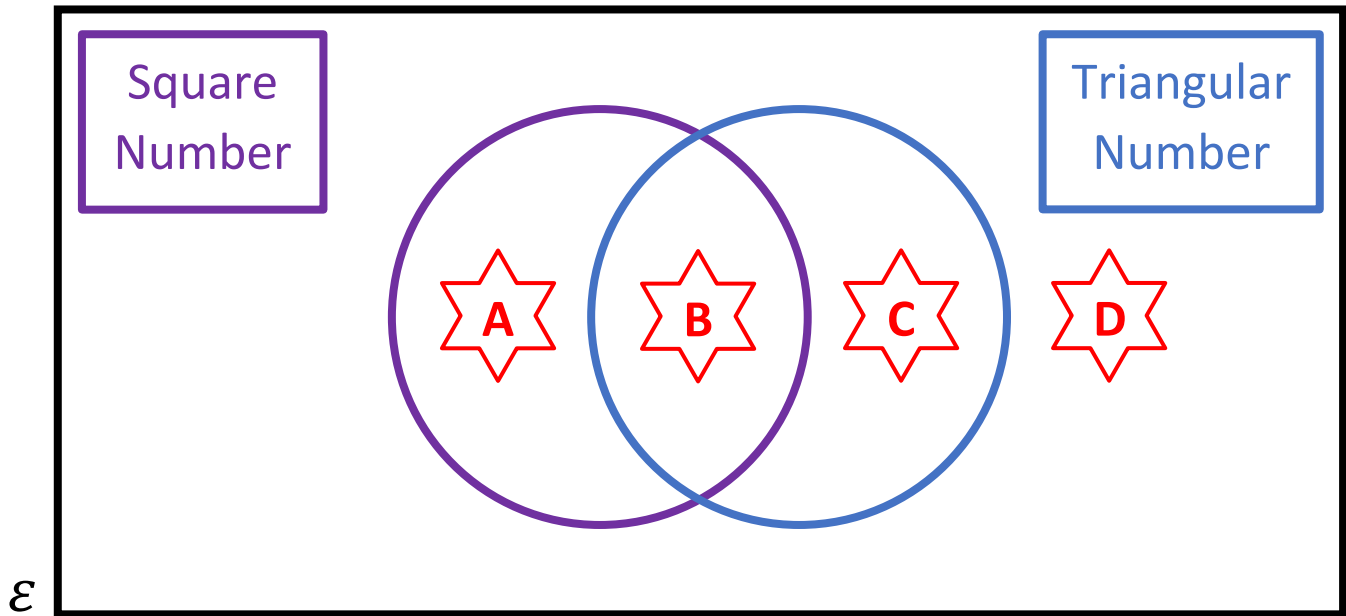
8) What is the least common multiple of 8 and 12?

9)  $8^{\frac{2}{3}}$

\_\_\_ out of 9



Venn Diagram Challenge 1



Write a number that could fit into each region. If you think a region is impossible to fill, explain why!











## Example 2



Make  $x$  the subject of the formula

$$5x - 4 = 9y + xz$$

$$5x - 4 = 9y + xz$$

$$5x - xz - 4 = 9y \quad [\text{Subtract } xz]$$

$$5x - xz = 9y + 4 \quad [\text{Add } 4]$$

$$x(5 - z) = 9y + 4 \quad [\text{Factorise}]$$

$$x = \frac{9y + 4}{5 - z} \quad [\text{Divide by } 5 - z]$$



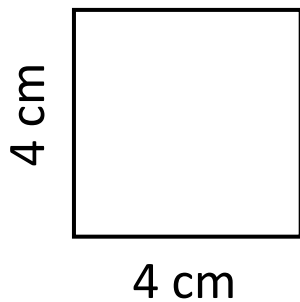


## Quiz 3

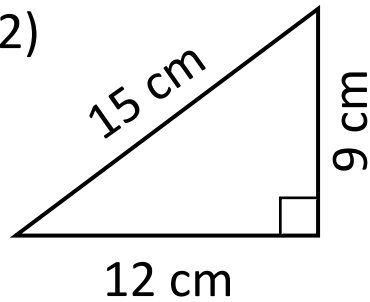


Calculate the area of the following shapes.

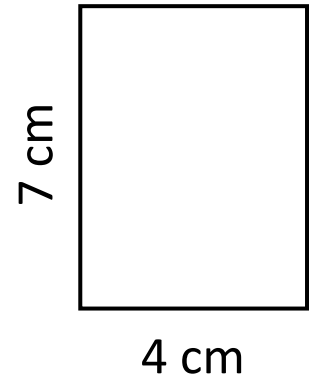
1)



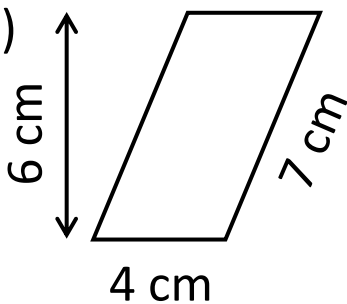
2)



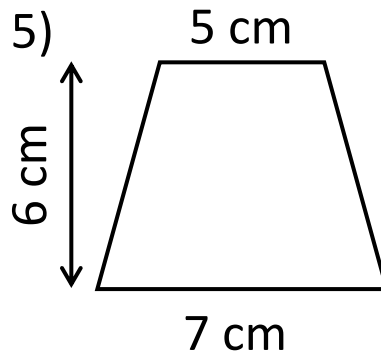
3)



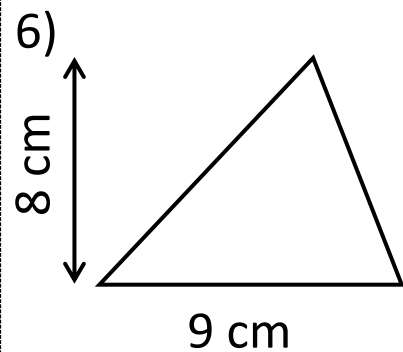
4)



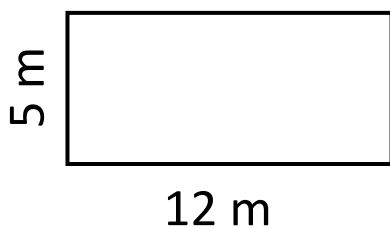
5)



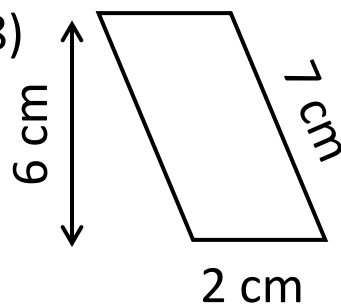
6)



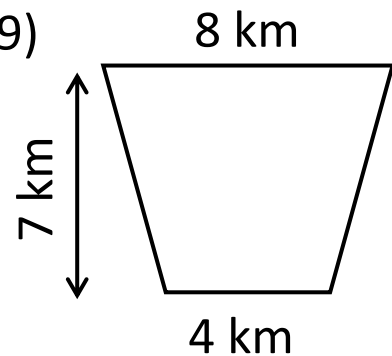
7)



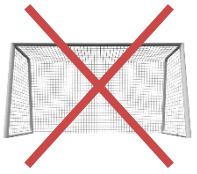
8)



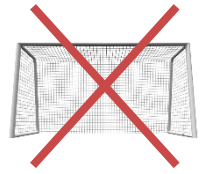
9)



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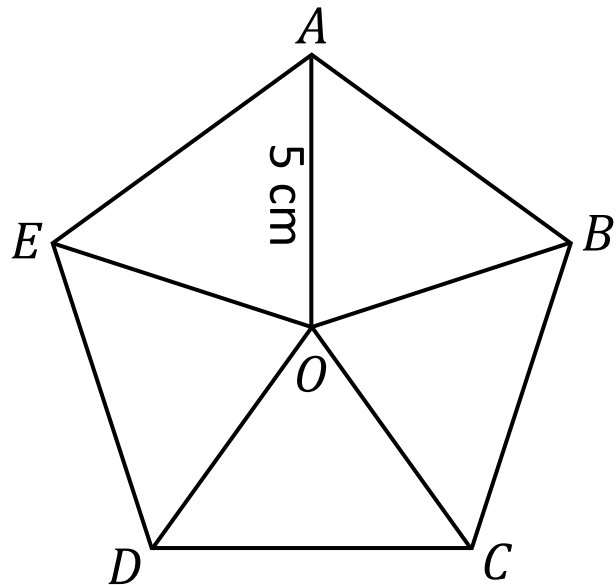


## The Regular Pentagon



The diagram shows a regular pentagon split into 5 congruent isosceles triangles.

What can you calculate from this information?





### Example 3



Solve the equation  $3x^2 - 7x + 1 = 0$ .

$$a = 3, b = -7, c = 1$$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$x = \frac{-(-7) \pm \sqrt{(-7)^2 - 4 \times 3 \times 1}}{2 \times 3}$$

$$x = \frac{7 \pm \sqrt{49 - 12}}{6}$$

$$x = \frac{7 \pm \sqrt{37}}{6}$$

Either  $x = \frac{7 + \sqrt{37}}{6}$  or  $x = \frac{7 - \sqrt{37}}{6}$

$$x = 2.18$$

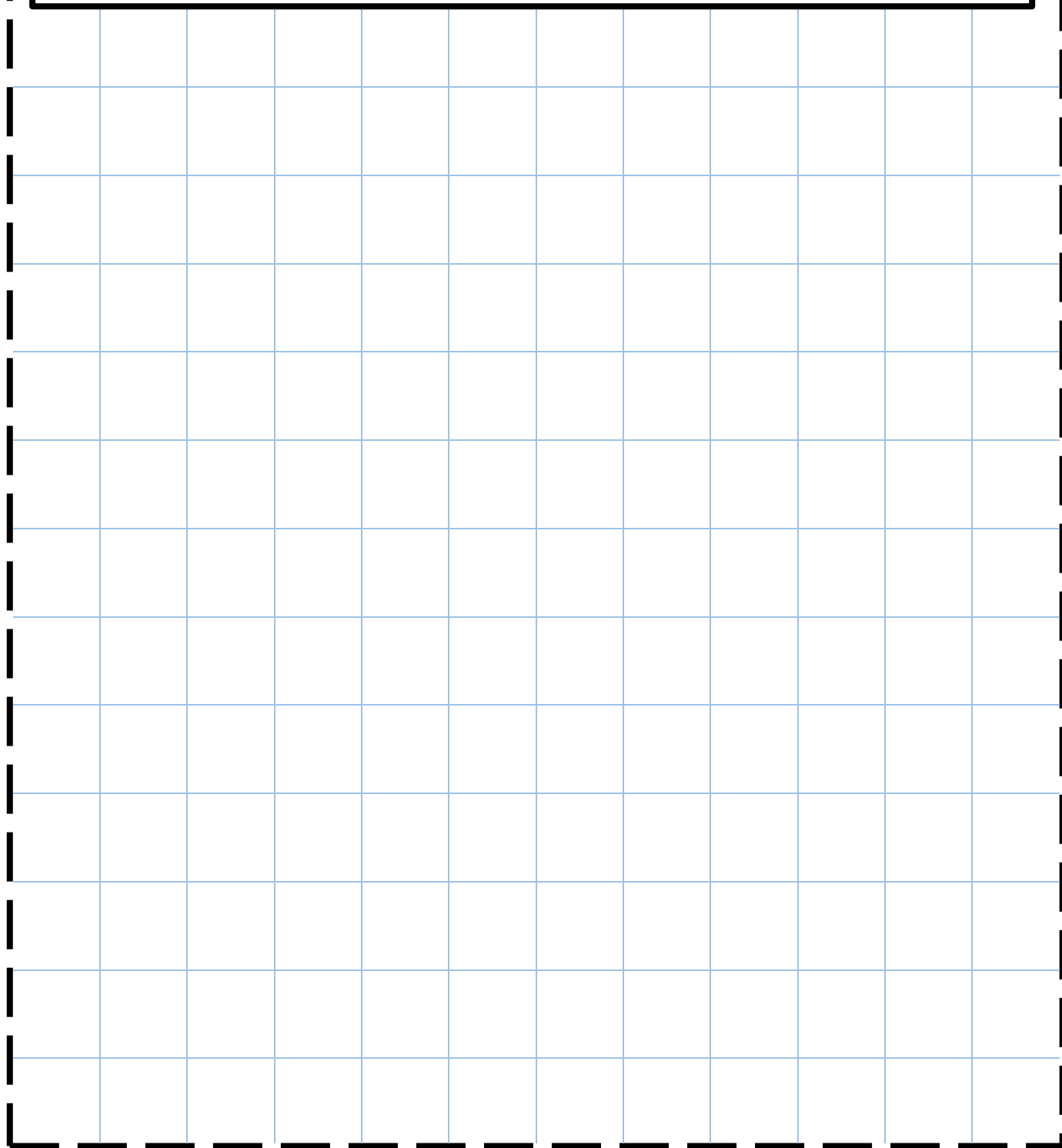
to 2 decimal places

$$x = 0.15$$

to 2 decimal places

**Exercise 3**

Solve the equation  $2x^2 - 4x - 3 = 0$ .



\_\_\_ out of 3



## Quiz 4



1) Expand  
 $4(x + 3)$

2) Factorise  
 $15y - 12$

3) Substitute  
 $x = -3$  into  
 $5 - 8x$

4) 20% of £60

5)  $\frac{2}{7}$  of £35

6)  $0.3 \times 12$

7) The range of  
8, 2, -3, 9, 0

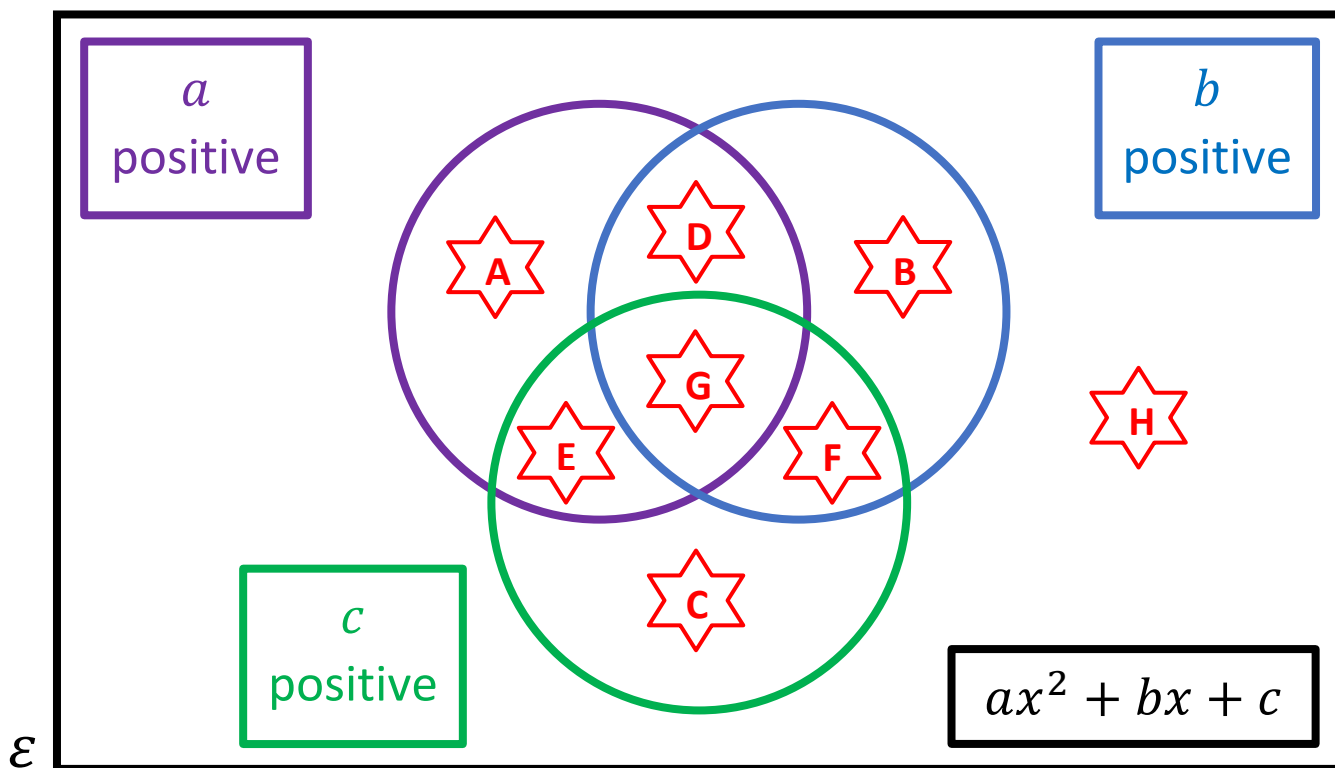
8) In which  
quadrant is the  
co-ordinate  
 $(-4, 3)$ ?

9) Write midnight  
in the 24-hour  
clock.

\_\_\_ out of 9



Venn Diagram Challenge 2



Write a pair of brackets which, after expanding, belong to each of the shown regions. If you think a region is impossible to fill, explain why!

|     |  |     |  |
|-----|--|-----|--|
| ★ A |  | ★ E |  |
| ★ B |  | ★ F |  |
| ★ C |  | ★ G |  |
| ★ D |  | ★ H |  |



### Example 4



Write  $\frac{2}{x+3} - \frac{3}{x-1}$  as a single fraction in its simplest form.

$$\frac{2}{x+3} - \frac{3}{x-1}$$

$$= \frac{2(x-1)}{(x+3)(x-1)} - \frac{3(x+3)}{(x+3)(x-1)}$$

$$= \frac{2(x-1) - 3(x+3)}{(x+3)(x-1)}$$

$$= \frac{2x - 2 - 3x - 9}{(x+3)(x-1)}$$

$$= \frac{-x - 11}{(x+3)(x-1)}$$





## Quiz 5



1) Total angles in a triangle = \_\_\_\_\_°

2) Estimate the value of  $\frac{293 \times 41.5}{5.99}$ .

3) Write 4,340,000 in standard form.

4) What is the probability of rolling a 4 on a standard fair die?

5)  $\frac{2}{7} + \frac{3}{7}$

6) Write one less than one billion, in figures.

7) Write half of a quarter as a fraction.

8) Draw an angle of  $73^\circ$  using a protractor.

9) How many thirds form 4 whole units?

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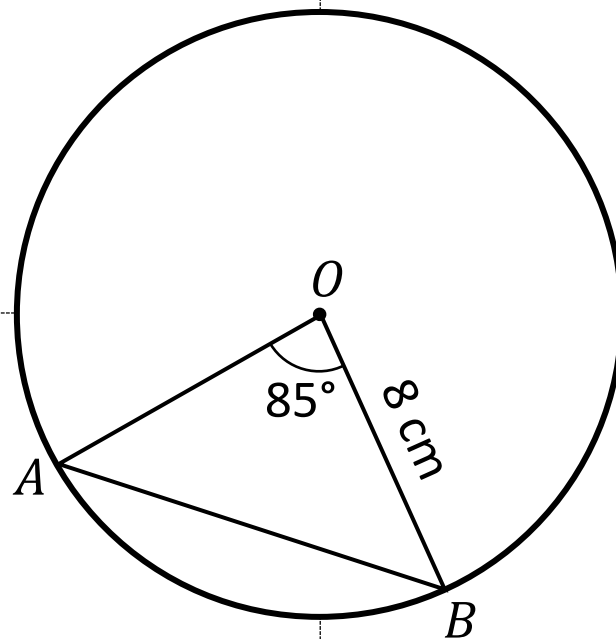


## Area of the Segment



1) Calculate the size of the angles  $O\hat{A}B$  and  $O\hat{B}A$ .

2) What is the area of the triangle  $OAB$ ?



3) What is the length of the chord  $AB$ ?

4) What is the area of the minor segment  $AB$ ?

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# Evaluating the Workbook



## Notes



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