

GCSE Revision – A Bit of Everything

CCEA - GCSE Higher

Unit M3



Corbettmaths

This is a collection of questions from all the topics on the revision checklist

### Guidance

1. Check your answers seem right.
2. Always show your workings
3. Take your time when working through this collection of questions

Revision for this test

[www.corbettmaths.com/contents](http://www.corbettmaths.com/contents)



| Question | Topic                          | Video number |
|----------|--------------------------------|--------------|
| 1        | Expanding 2 Brackets           | 14           |
| 2        | Factorising Quadratics         | 118          |
| 3        | Difference Between Two Squares | 120          |
| 4        | Solving Quadratics             | 266          |
| 5        | Algebraic Fractions            | 22 to 24     |
| 6        | Equations                      | 111          |
| 7        | Forming Quadratic Equations    | 266          |
| 8        | Equation of a Line             | 186 to 195   |
| 9        | Parallel Lines                 | 196          |
| 10       | Parts of a Circle              | 61           |
| 11       | Pressure                       | 385          |
| 12       | Arc Length                     | 58           |
| 13       | Area of a Sector               | 46           |
| 14       | Surface Area - Cylinder        | 315          |
| 15       | Surface Area - Cone            | 314          |
| 16       | Surface Area - Sphere          | 313          |
| 17       | Volume of a Cone               | 359          |
| 18       | Volume of a Sphere             | 361          |
| 19       | Trigonometry                   | 329 to 331   |
| 20       | Product of Primes              | 223, 224     |
| 21       | Reverse Percentages            | 240          |
| 22       | Bounds                         | 183          |
| 23       | Quartiles                      | 57a          |
| 23       | Interquartile Range            | 57a          |
| 24       | Cumulative Frequency           | 153, 154     |
| 25       | Box Plots                      | 149, 150     |

\* Remember to check out the A Bit of Everything for M1 and M2 \*

1. Expand and simplify  $(y - 2)(y + 3)$

.....  
(2)

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2. Factorise  $y^2 - 12y - 64$

.....  
(2)

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3. Factorise fully  $y^2 - 49$

.....  
(2)

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4. Solve  $m^2 + 24m + 63 = 0$

.....  
(2)

5. (a) Simplify

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

.....  
(2)

(b) Simplify

$$\frac{x^2 - 3x + 2}{x^2 + 5x - 6}$$

.....  
(3)

(c) Simplify fully.

$$\frac{3x}{y} \div \frac{2x}{w}$$

.....  
(2)

6. Solve

$$\frac{w + 7}{4} + \frac{3w + 1}{2} = -3$$

.....  
**(3)**

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7. A rectangular field is 10m longer than wide.  
The area of the field is 2000m<sup>2</sup>.

Let the width of the rectangle be x metres.

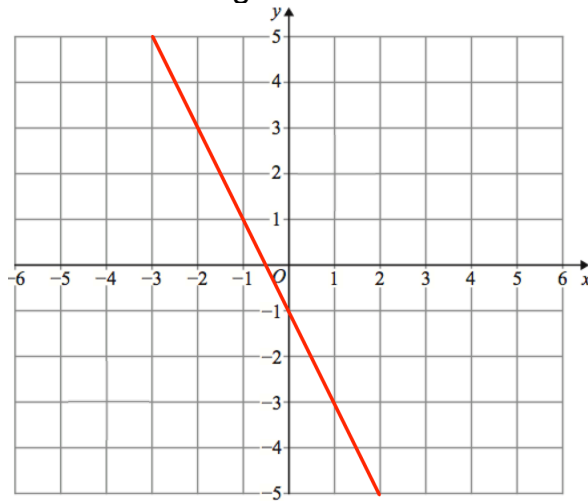
(a) Show that  $x^2 + 10x - 2000 = 0$

**(2)**

(b) Find the perimeter of the field.

.....m  
**(3)**

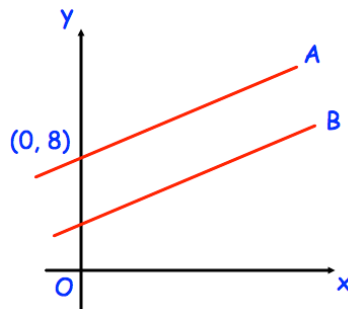
8. A straight line L is shown on the grid.



Work out the equation of line L

.....  
(3)

9.



The lines A and B are parallel.

The line A passes through the point (0, 8)

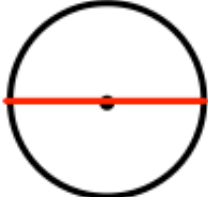



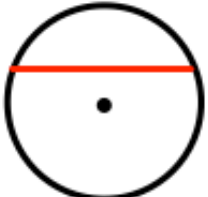

The line B has equation  $y = 3x + 1$

Write down the equation of line A

.....  
(2)

10. Here are 6 diagrams and 6 labels.  
In the diagram the centre of the circle is shown with a dot.

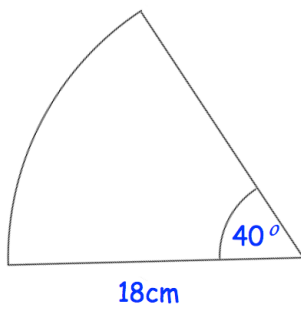
Match each diagram to its label.  
One has been done for you.

| Label               | Diagram   |
|---------------------|---|
| Circle and radius   |    |
| Circle and segment  |    |
| Circle and arc      |   |
| Circle and diameter |  |
| Circle and tangent  |  |
| Circle and chord    |  |

11. Find the pressure exerted by a force of 240 newtons on an area of  $30\text{cm}^2$   
Give your answer in newtons/ $\text{m}^2$

.....  
**(3)**

- 12.

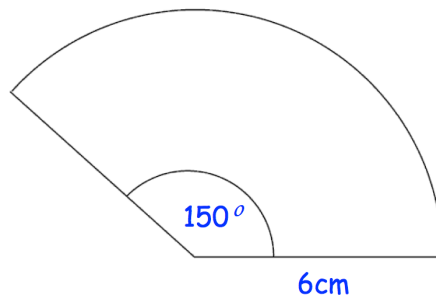


Find the length of the arc, giving your answer to 1 decimal place.

.....cm  
**(3)**



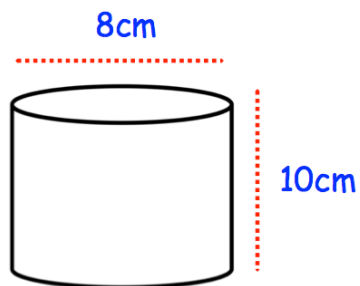
13. Shown is a sector of a circle.



Find the area of the sector.

..... $\text{cm}^2$   
**(3)**

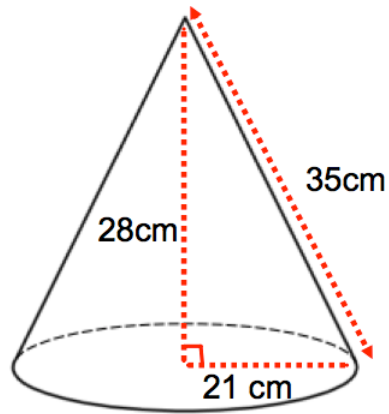
14. Below is a cylinder with diameter  $8\text{cm}$  and  $10\text{cm}$ .



Find the surface area of the cylinder.

.....  $\text{cm}^2$   
**(3)**

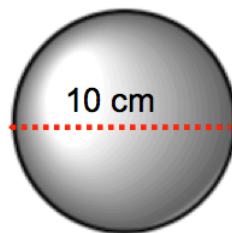
15. A cone has base radius 21cm, perpendicular height 28cm and slant height 35cm.



Work out the surface area of the cone.

.....cm<sup>2</sup>  
**(3)**

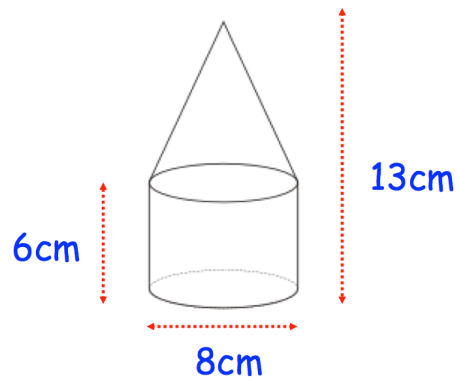
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16. Shown is a sphere with diameter 10cm.



Calculate the surface area of the sphere.  
Give your answer to 1 decimal place.

.....cm<sup>2</sup>  
**(3)**

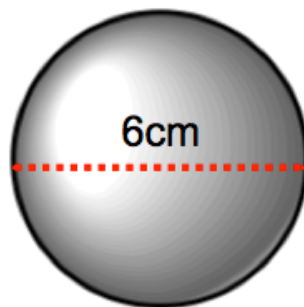
17. A solid is formed from a cylinder and a cone.  
Find the volume of the solid.



.....cm<sup>3</sup>  
(3)

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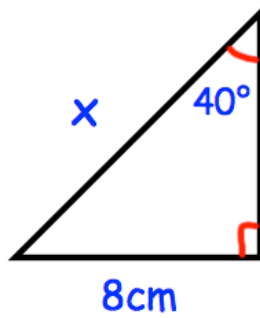
18. Shown is a sphere with diameter 6cm.



Calculate the volume of the sphere.

.....cm<sup>3</sup>  
(3)

19. The diagram shows a right-angled triangle.



Calculate the length of  $x$ .

.....cm  
**(3)**

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20. (a) Write 60 as a product of its prime factors.

.....  
**(2)**

(b) Find the Lowest Common Multiple (LCM) of 60 and 75.

.....  
**(2)**

21. Jacob buys a watch costing £84  
This cost includes VAT at a rate of 20%.

How much is the watch without VAT?

£.....  
**(3)**

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22. Find the least and greatest total length of 6 sausages, each measuring 8cm to the nearest centimetre.

Least length .....cm

Greatest length .....cm  
**(3)**

23. On a football pitch, there are 23 people, including the referee.

Here are their ages.

18 18 18 18 19 19 21 22 22 23 24 24  
26 27 28 28 29 30 32 32 33 35 51

(a) Find the lower quartile of the ages.

.....  
(1)

(b) Find the interquartile range of the ages.

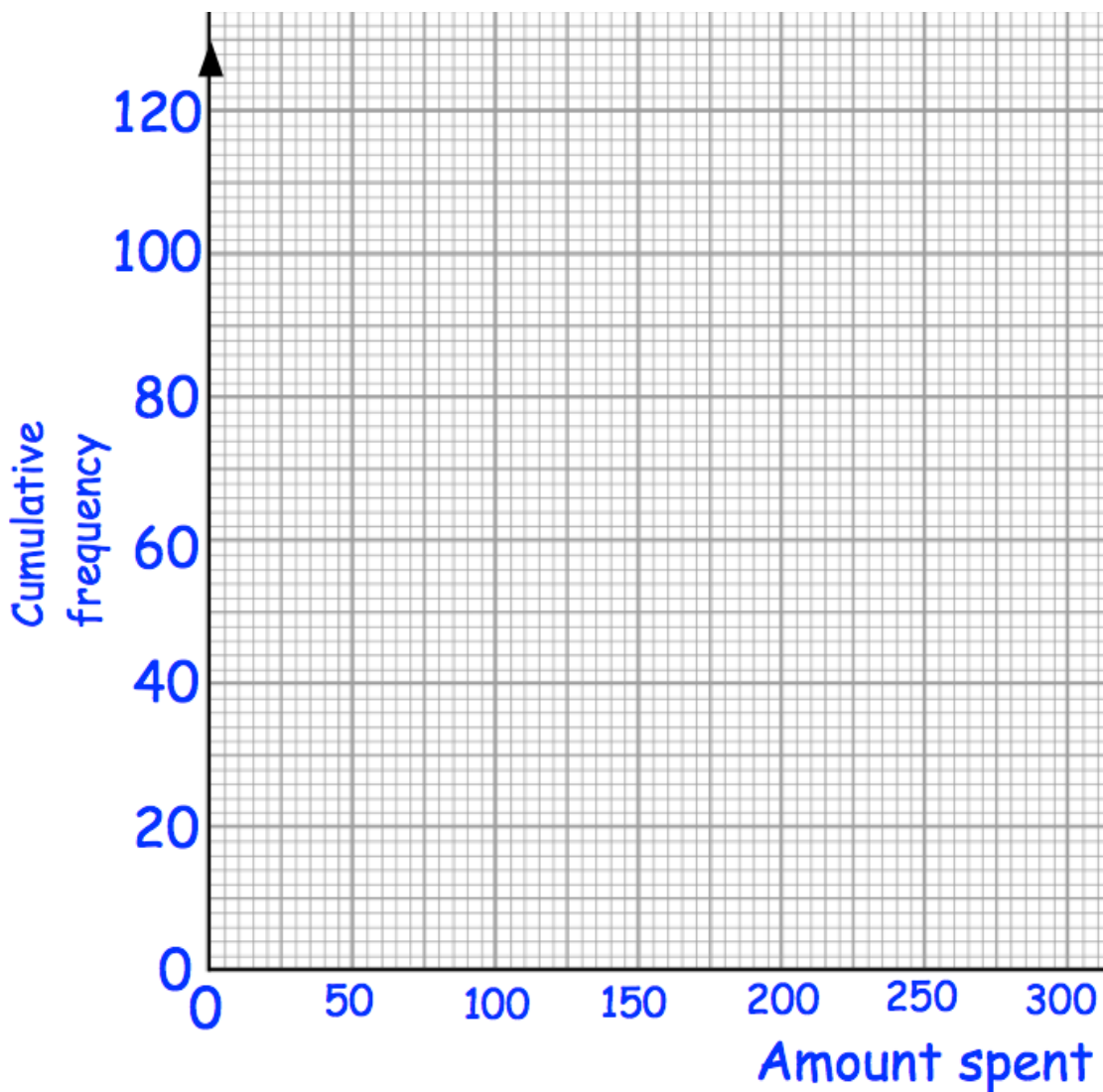
.....  
(1)

24. John did a survey about the amounts of money spent by 120 women while Christmas shopping.

The cumulative frequency table shows this information.

| Amount spent, £x | Cumulative frequency |
|------------------|----------------------|
| $0 < x \leq 50$  | 6                    |
| $0 < x \leq 100$ | 30                   |
| $0 < x \leq 150$ | 80                   |
| $0 < x \leq 200$ | 100                  |
| $0 < x \leq 250$ | 112                  |
| $0 < x \leq 300$ | 120                  |

- (a) On the grid, draw a cumulative frequency diagram.



(2)

(b) Use the cumulative frequency diagram to estimate the median.

£.....  
**(2)**

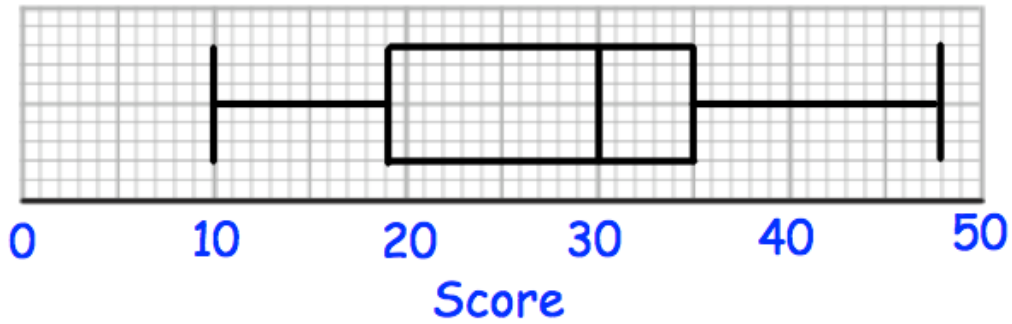
John then surveyed men about the amount of money they spent while Christmas shopping. The median was £160.

(c) Compare the amounts of money spent by the women with the amounts of money spent by the men.

.....  
.....  
.....  
**(1)**



25. Mrs Davis sets her class a quiz, which has a maximum score of 50. The distribution of the scores are shown in a box plot below.



- (a) Write down the median score.

.....  
(1)

- (b) Write down the highest score.

.....  
(1)

- (c) Find the interquartile range.

.....  
(2)

Martin scored 35 marks.

- (d) What percentage of the class scored a lower mark than Martin?

.....%  
(1)

The interquartile range is a better measure of the spread of a distribution than the range.

Explain why.

.....  
.....  
(1)