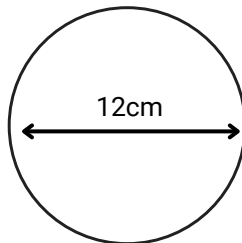
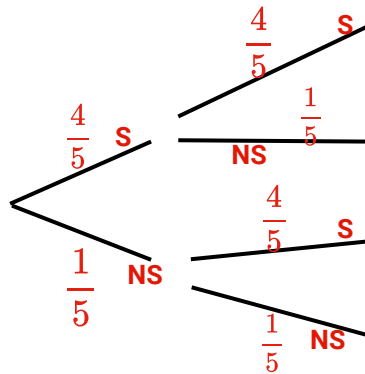
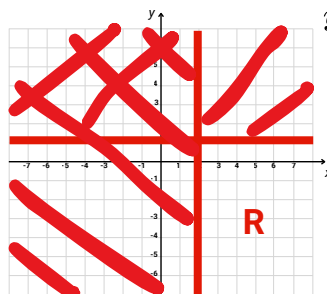




# CCEA GCSE Maths Revision Mat

M7



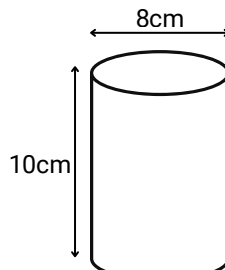
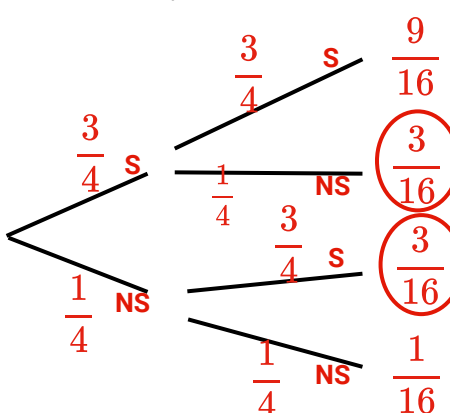
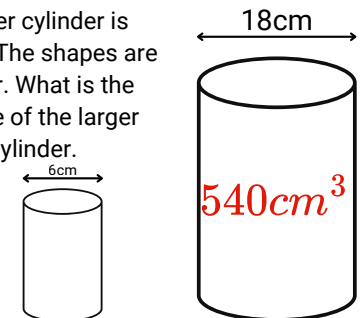
|                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                           |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Solve:</p> $2x + 9y = 69$ $x + 3y = 24$ $x = 3, y = 7$                                                                                                                                                                                                                                   | <p>Simplify:</p> $x^{-3} \times x^7$ $\frac{y^5}{y^{-2}}$ $x^4$ $y^7$                                                                                                                                                                              | <p>At a sports day, students must choose:</p> <ul style="list-style-type: none"> <li>one track event</li> <li>one field event</li> </ul> <p>How many different combinations are possible? <math>16</math></p> <p><u>Track:</u> 100m, 400m, 800m, 1500m<br/><u>Field:</u> Long Jump, Hammer, Shot, Javelin</p> | <p>Find the area of the circle.<br/>Give your answer in terms of <math>\pi</math>.</p> <p><math>36\pi\text{cm}^2</math></p>                                                            |
| <p>Find the nth term of:</p> <p>2, 8, 18, 32, 50</p> $2n^2$                                                                                                                                                                                                                                 | <p>Make x the subject of the formula:</p> $y = \sqrt{3x + 5}$ $x = \frac{y^2 - 5}{3}$                                                                                                                                                              | <p>Write the following in standard form:</p> <p>540000 <math>5.4 \times 10^5</math></p> <p>0.0072 <math>7.2 \times 10^{-3}</math></p> <p>820700 <math>8.207 \times 10^5</math></p> <p>0.000405 <math>4.05 \times 10^{-4}</math></p>                                                                           | <p>A football team takes two penalties.<br/>The probability of scoring a penalty is <math>\frac{4}{5}</math>.</p> <p>Each penalty is independent.<br/>Complete the tree diagram.</p>  |
| <p>Write the following as an ordinary number:</p> <p><math>3.6 \times 10^4</math> <math>36000</math></p> <p><math>9.1 \times 10^{-3}</math> <math>0.0091</math></p> <p><math>4.01 \times 10^{-4}</math> <math>0.000401</math></p> <p><math>7.85 \times 10^6</math> <math>7850000</math></p> | <p>A quantity a is directly proportional to b.</p> <p>When <math>a = 18, b = 4</math>.</p> <p>Find:</p> <p>1. an equation connecting a and b.<br/>2. the value of a when <math>b = 10</math>.</p> <p><math>a = 4.5b</math> <math>a = 45</math></p> | <p>Indicate the region satisfying <math>x \geq 2</math> and <math>y \leq 1</math></p>                                                                                                                                    |                                                                                                                                                                                                                                                                           |



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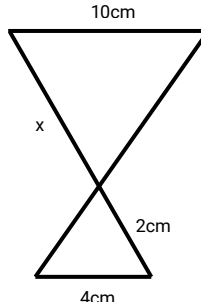
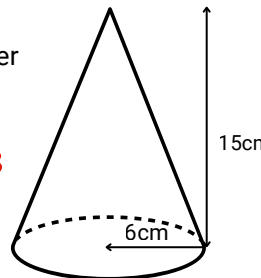
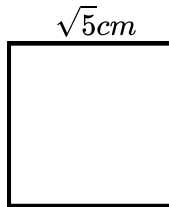
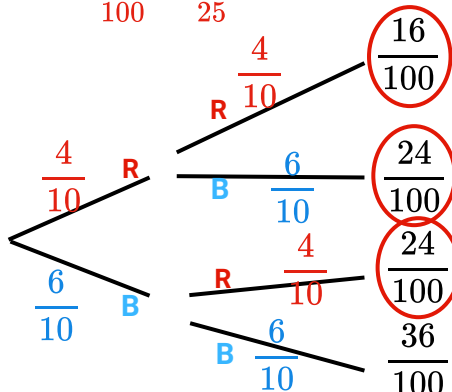
|                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                         |     |      |     |   |     |      |   |    |    |   |    |    |    |   |   |   |   |     |      |                                                                                                            |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|------|-----|---|-----|------|---|----|----|---|----|----|----|---|---|---|---|-----|------|------------------------------------------------------------------------------------------------------------|
| <p>Solve:</p> $2x + 3y = 12$ $5x - 2y = 11$ $x = 3, y = 2$                                                                                                                                                                              | <p>Simplify:</p> $\frac{4b^{-2}}{2b^{-3}}$ $2x^{-2} \times 3x^5$ $2b$ $6x^3$                                                                                                                                                                                | <p>Complete the reciprocal graph table for</p> $y = \frac{8}{x}$ <table><tr><td>x</td><td>0.2</td><td>0.25</td><td>0.5</td><td>1</td><td>2</td><td>4</td><td>8</td><td>16</td><td>32</td></tr><tr><td>y</td><td>40</td><td>32</td><td>16</td><td>8</td><td>4</td><td>2</td><td>1</td><td>0.5</td><td>0.25</td></tr></table> | x                                                                                                                                                                                                                                                                                                                                                                                                                       | 0.2 | 0.25 | 0.5 | 1 | 2   | 4    | 8 | 16 | 32 | y | 40 | 32 | 16 | 8 | 4 | 2 | 1 | 0.5 | 0.25 | <p>Find the nth term of:</p> $\frac{3}{10}, \frac{5}{20}, \frac{7}{30}, \frac{9}{40}$ $\frac{2n + 1}{10n}$ |
| x                                                                                                                                                                                                                                       | 0.2                                                                                                                                                                                                                                                         | 0.25                                                                                                                                                                                                                                                                                                                        | 0.5                                                                                                                                                                                                                                                                                                                                                                                                                     | 1   | 2    | 4   | 8 | 16  | 32   |   |    |    |   |    |    |    |   |   |   |   |     |      |                                                                                                            |
| y                                                                                                                                                                                                                                       | 40                                                                                                                                                                                                                                                          | 32                                                                                                                                                                                                                                                                                                                          | 16                                                                                                                                                                                                                                                                                                                                                                                                                      | 8   | 4    | 2   | 1 | 0.5 | 0.25 |   |    |    |   |    |    |    |   |   |   |   |     |      |                                                                                                            |
| <p>A is directly proportional to the square of b.</p> <p>When <math>b = 3</math>, <math>A = 45</math>.</p> <p>Find:</p> <p>1. an equation connecting A and b.</p> <p>2. the value of A when <math>b = 7</math></p> $A = 5b^2$ $A = 245$ | <p>Find the volume of the cylinder.</p> <p>Give your answer in terms of <math>\pi</math>.</p> $160\pi cm^3$                                                              | <p>Calculate. Leave your answer in standard form.</p> $(2 \times 10^3) \times (4 \times 10^5) = 8 \times 10^8$ $\frac{9 \times 10^7}{3 \times 10^2} = 3 \times 10^5$                                                                                                                                                        | <p>A basketball player takes two free throws.</p> <p>The probability that the player scores a free throw is <math>\frac{3}{4}</math>.</p> <p>Each throw is independent. <math>\frac{6}{16} = \frac{3}{8}</math></p> <p>By completing the tree diagram, work out the probability that the player scores exactly one free throw.</p>  |     |      |     |   |     |      |   |    |    |   |    |    |    |   |   |   |   |     |      |                                                                                                            |
| <p>Calculate. Leave your answer in standard form.</p> $(4 \times 10^5) + (2 \times 10^3) = 4.02 \times 10^5$ $(9 \times 10^6) - (2 \times 10^4) = 8.98 \times 10^6$                                                                     | <p>At a cinema, 3 adult tickets and 2 child tickets cost £29.50.</p> <p>5 adult tickets and 4 child tickets cost £52.50</p> <p>Find the cost of:</p> <ul style="list-style-type: none"><li>one adult ticket £6.50</li><li>one child ticket. £5.00</li></ul> | <p>The volume of the smaller cylinder is <math>20cm^3</math>. The shapes are similar. What is the volume of the larger cylinder.</p>  $540cm^3$                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                         |     |      |     |   |     |      |   |    |    |   |    |    |    |   |   |   |   |     |      |                                                                                                            |



# CCEA GCSE Maths Revision Mat

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|                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                |                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                 |    |    |   |    |   |   |   |     |    |   |   |   |   |    |                                                                                                                                  |                                                                                                            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|----|---|----|---|---|---|-----|----|---|---|---|---|----|----------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| <p>Solve:</p> $3x + y = 39$ $2y = x + 1$ $x = 11, y = 6$                                                                                                                                                                                                                                    | <p>Complete the table of values for</p> $y = x^3 - 2x + 1$ <table border="1"><tr><td>x</td><td>-3</td><td>-2</td><td>-1</td><td>0</td><td>1</td><td>2</td><td>3</td></tr><tr><td>y</td><td>-20</td><td>-3</td><td>2</td><td>1</td><td>0</td><td>5</td><td>22</td></tr></table> | x                                                                                                                                                                       | -3                                                                                                                                                                                                                                                                                                                                              | -2 | -1 | 0 | 1  | 2 | 3 | y | -20 | -3 | 2 | 1 | 0 | 5 | 22 | <p>Work out the length of x.</p> <p>5 cm</p>  | <p>Find the nth term of:</p> $\frac{5}{2}, \frac{8}{3}, \frac{11}{4}, \frac{14}{5}$ $\frac{3n + 2}{n + 1}$ |
| x                                                                                                                                                                                                                                                                                           | -3                                                                                                                                                                                                                                                                             | -2                                                                                                                                                                      | -1                                                                                                                                                                                                                                                                                                                                              | 0  | 1  | 2 | 3  |   |   |   |     |    |   |   |   |   |    |                                                                                                                                  |                                                                                                            |
| y                                                                                                                                                                                                                                                                                           | -20                                                                                                                                                                                                                                                                            | -3                                                                                                                                                                      | 2                                                                                                                                                                                                                                                                                                                                               | 1  | 0  | 5 | 22 |   |   |   |     |    |   |   |   |   |    |                                                                                                                                  |                                                                                                            |
| <p>A is directly proportional to the square root of b.</p> <p>When <math>b = 36</math>, <math>A = 24</math>.</p> <p>Find:</p> <ol style="list-style-type: none"><li>an equation connecting A and b.</li><li>the value of b when <math>A = 40</math></li></ol> $A = 4\sqrt{b} \quad b = 100$ | <p>Find the volume of the cone.</p> <p>Give your answer in terms of <math>\pi</math>.</p> <p><math>180\pi cm^3</math></p>                                                                   | <p>Calculate. Leave your answer in standard form.</p> $(8 \times 10^5) \times (5 \times 10^{-2}) = 4 \times 10^4$ $\frac{2 \times 10^8}{5 \times 10^2} = 4 \times 10^5$ | <p>A jar contains:</p> <ul style="list-style-type: none"><li>4 red marbles</li><li>6 blue marbles</li></ul> <p>A marble is taken from the jar, replaced, and then a second marble is taken.</p> <p>By completing the tree diagram, work out the probability of getting at least one red marble. <math>\frac{64}{100} = \frac{16}{25}</math></p> |    |    |   |    |   |   |   |     |    |   |   |   |   |    |                                                                                                                                  |                                                                                                            |
| <p>At a cafe, 4 smoothies and 3 sandwiches cost £31.40.</p> <p>7 smoothies and 5 sandwiches cost £53.60.</p> <p>Steve is buying lunch for the office. He needs 10 smoothies and 10 sandwiches. <b>£92</b></p> <p>How much will this cost him?</p>                                           | <p>A square has perimeter <math>\sqrt{5}</math> cm.</p> <p>Work out the perimeter of the square.</p> <p>Give your answer in surd form.</p> <p><math>4\sqrt{5}cm</math></p>                 | <p>Find the nth term of:</p> <p>2, 6, 12, 20, 30</p> $n^2 + n$                                                                                                          |                                                                                                                                                                                                                                                            |    |    |   |    |   |   |   |     |    |   |   |   |   |    |                                                                                                                                  |                                                                                                            |