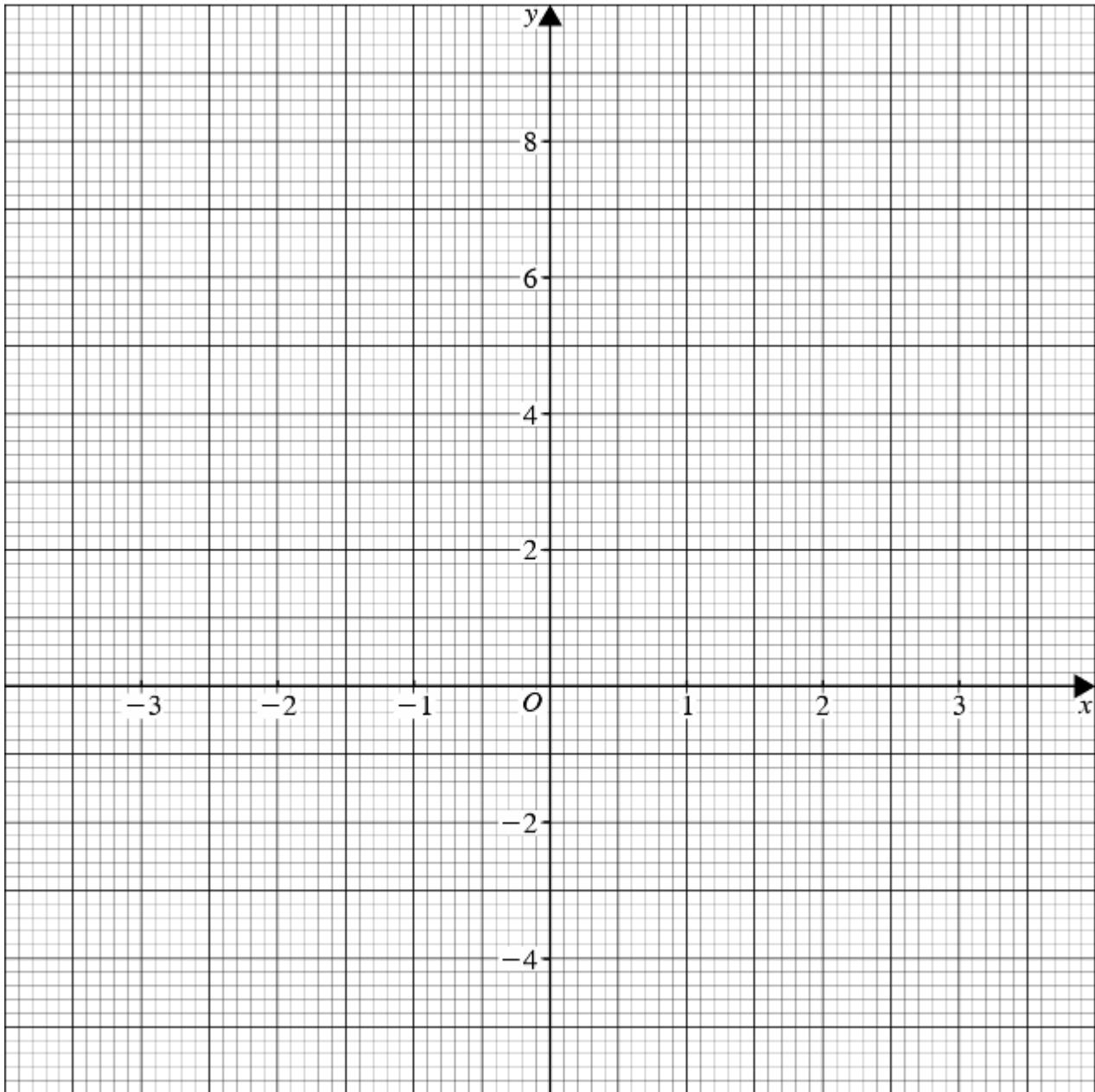


1.(a) Complete the table of values for $y=2^x$ (2)

| | | | | | | | |
|-----|----|----|----|---|---|---|---|
| x | -3 | -2 | -1 | 0 | 1 | 2 | 3 |
| y | | | | | | | |

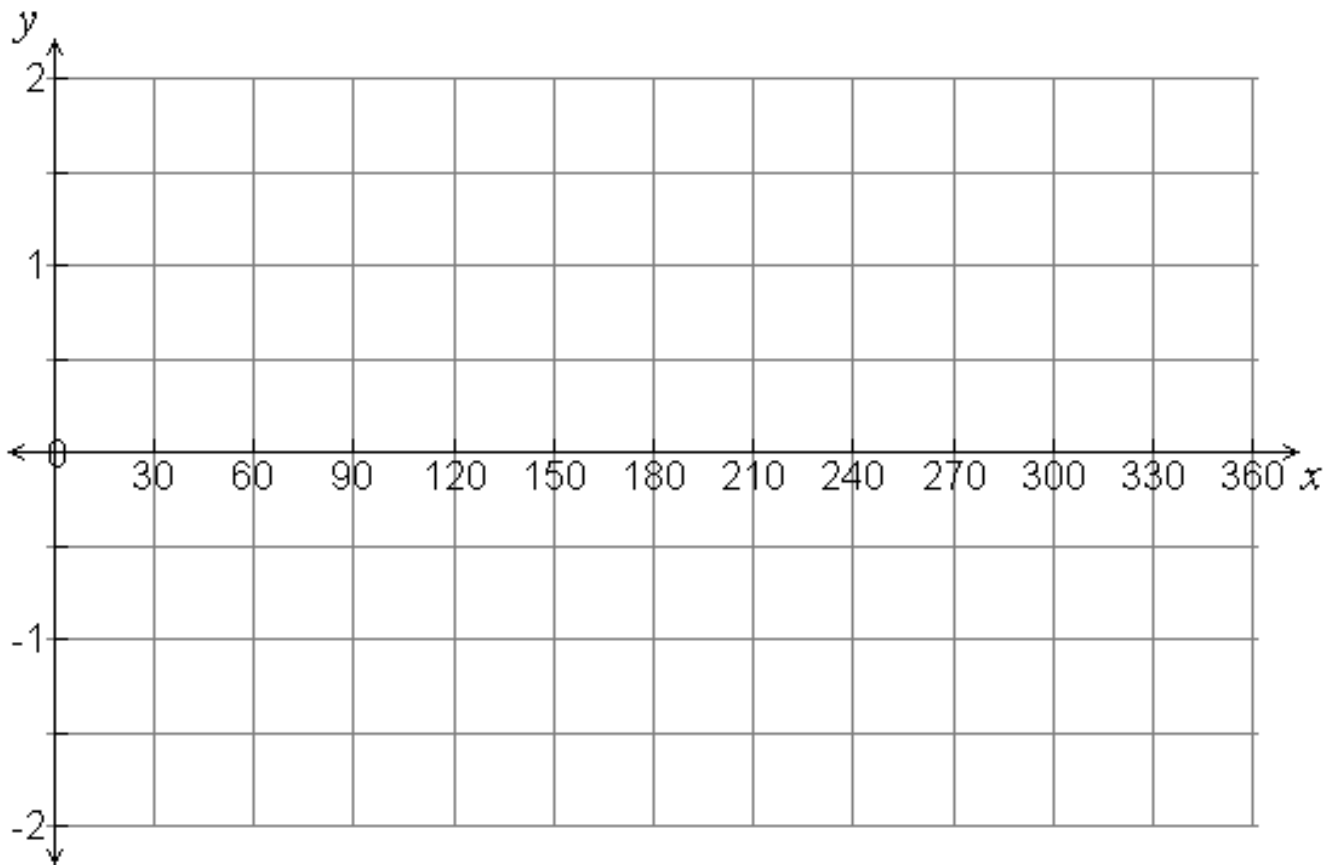
b) On the grid, draw the graph of $y=2^x$ (2)



2.(a) Complete the table of values for $y = \sin(x)$ (2)

| x | 0 | 30 | 60 | 90 | 120 | 150 | 180 | 210 | 240 | 270 | 300 | 330 | 360 |
|---|---|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| y | | | | | | | | | | | | | |

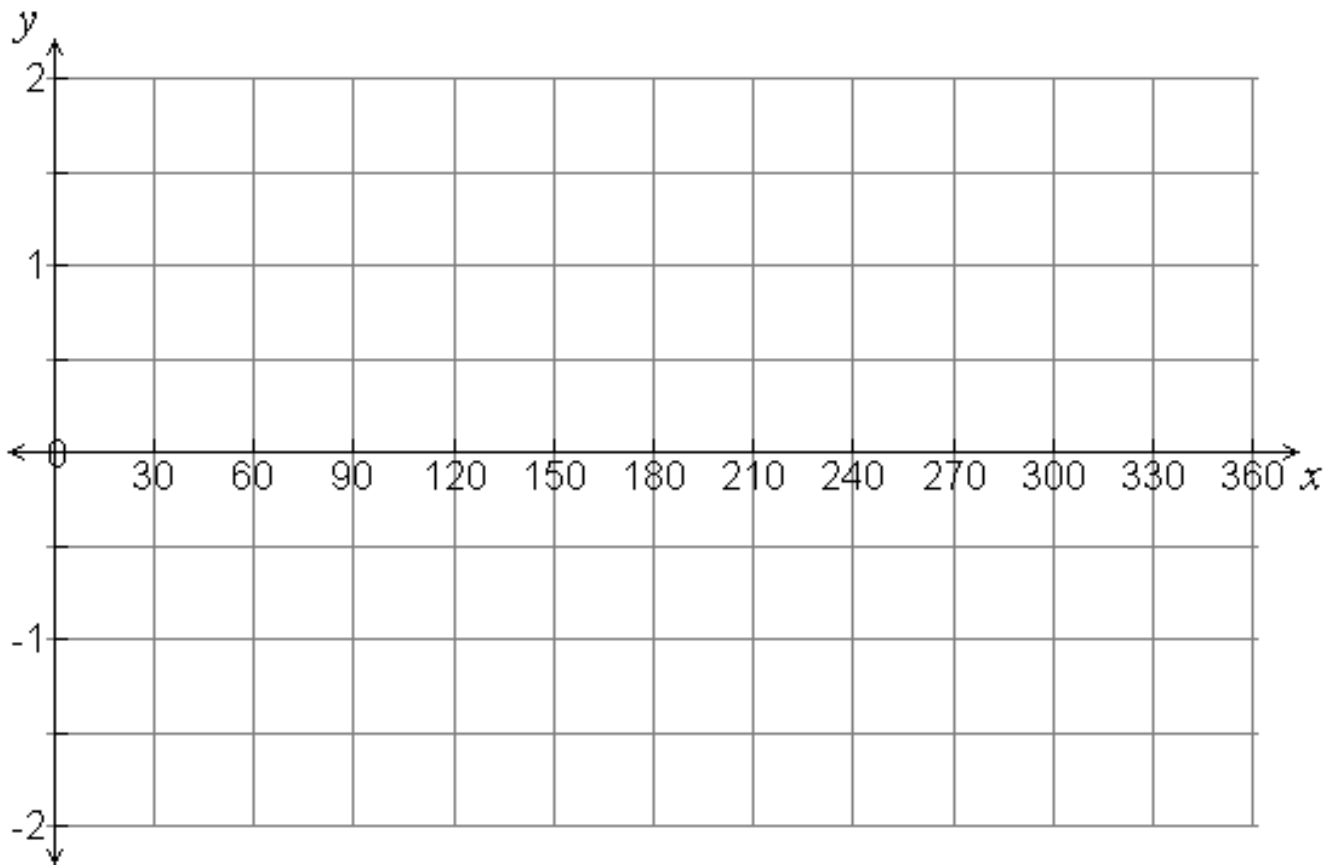
b) On the grid, draw the graph of $y = \sin(x)$ (2)



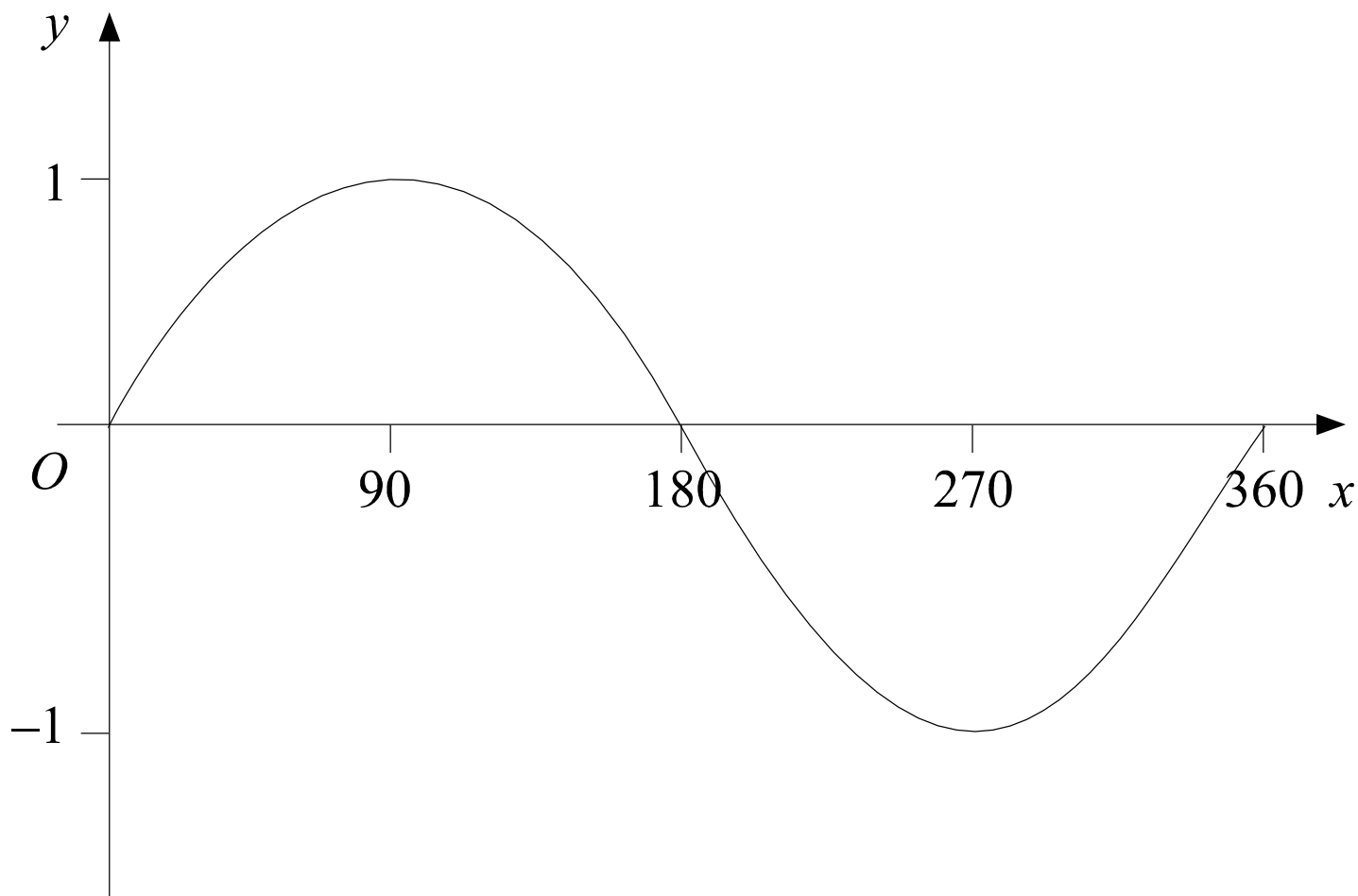
3.(a) Complete the table of values for $y = \cos(x)$ (2)

| x | 0 | 30 | 60 | 90 | 120 | 150 | 180 | 210 | 240 | 270 | 300 | 330 | 360 |
|---|---|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| y | | | | | | | | | | | | | |

b) On the grid, draw the graph of $y = \cos(x)$ (2)



4. Here is a sketch of the curve $y = \sin x^\circ$ for $0 \leq x \leq 360$

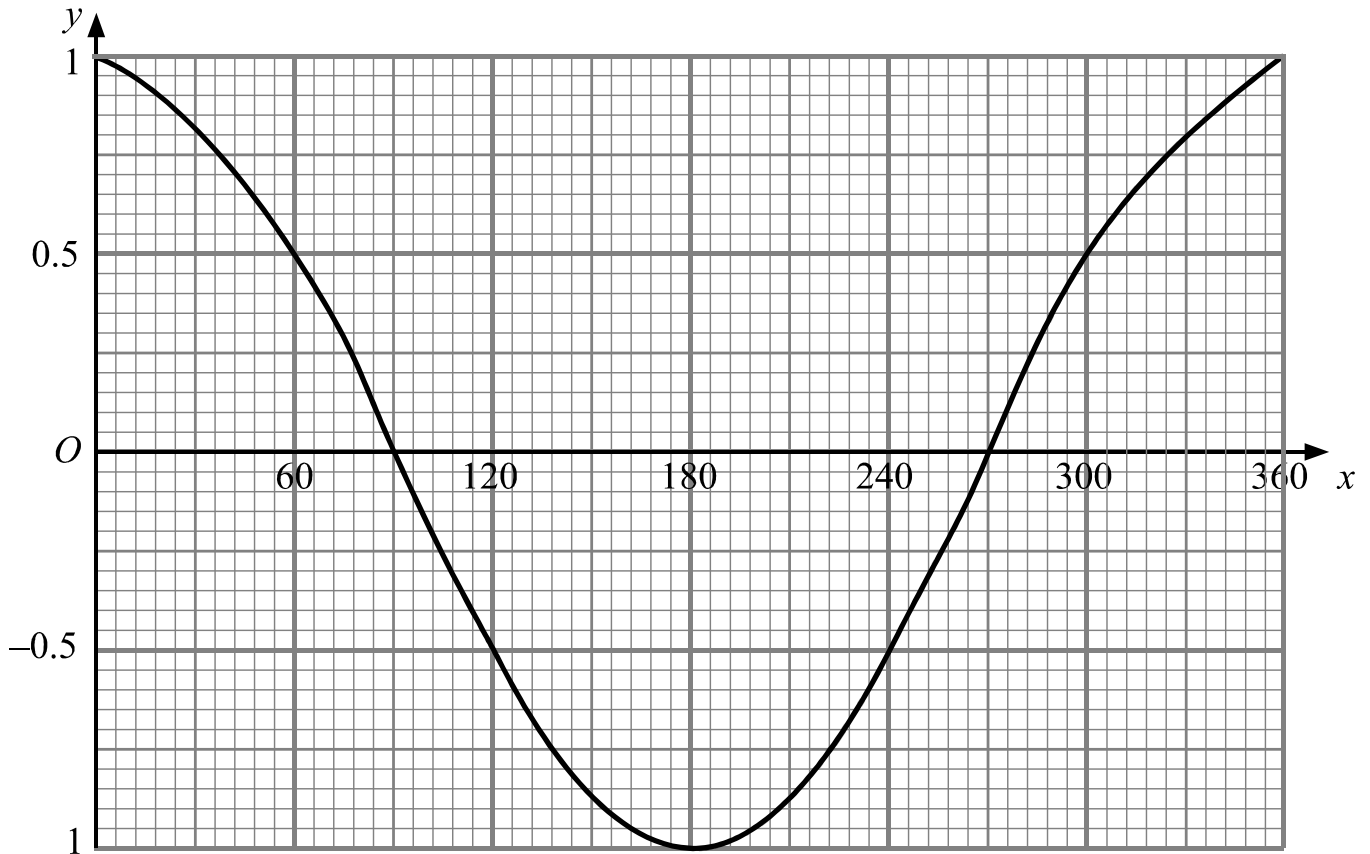


a) Given that $\sin 30^\circ = \frac{1}{2}$, write down the value of:

i) $\sin 150^\circ$ (1)

ii) $\sin 330^\circ$ (1)

5. Here is a sketch of the curve $y = \cos x^\circ$ for $0 \leq x \leq 360$

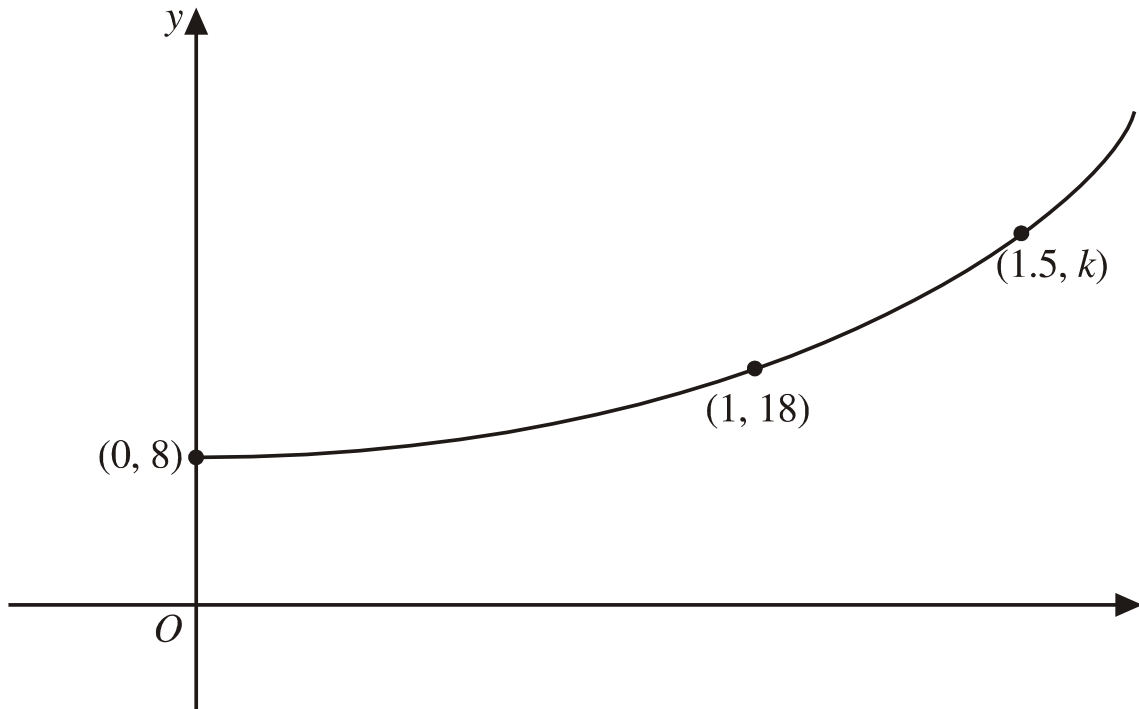


a) Use the graph to find estimates of the solutions, in the interval $0 \leq x \leq 360$, of the equation:

i) $\cos(x) = -0.4$ (2)

ii) $4 \cos(x) = 3$ (2)

6. This sketch shows part of the graph with equation $y = pq^x$, where p and q are constants.

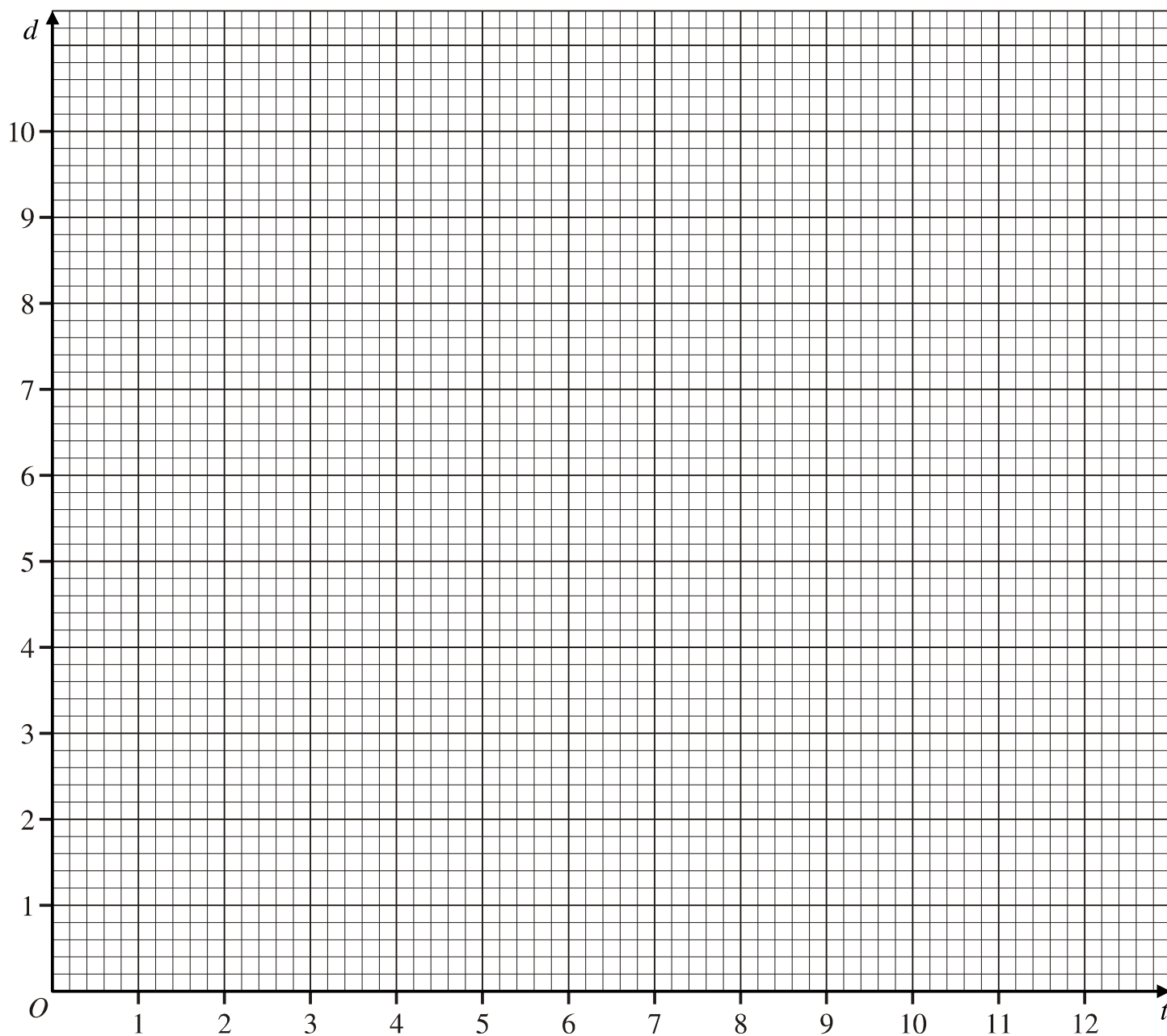


The points with coordinates $(0, 8)$, $(1, 18)$ and $(1.5, k)$ lie on the graph. Calculate the values of p , q and k .

7.

The depth of water, d metres, at the entrance to a harbour is given by the formula: $d = 5 - 4 \sin(30t)$ where t is the time in hours after midnight on one day.

a) On the axes below, draw the graph of d against t for $0 \leq t \leq 12$. (4)



b) Find the two values of t , where $0 \leq t \leq 24$, when the depth is least.

..... and (1)