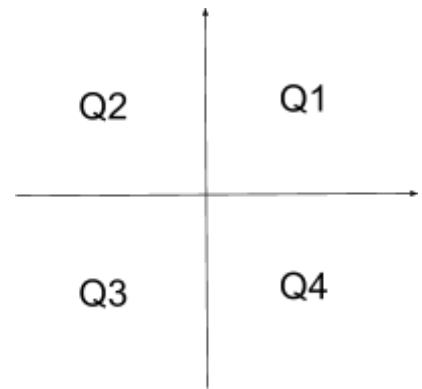


1. **(T3.5, E, CI)** We can consider a graph to have four quadrants, as indicated in the diagram. For each quadrant indicate whether sine, cosine, and tangent are positive or negative.

(Oxford, 13.1, p.448)

	Q1	Q2	Q3	Q4
Sine				
Cosine				
Tangent				



2. **(T3.5, E, CI)** Using your knowledge of quadrants and special right triangles, answer the following questions without the use of technology.

(Oxford, 13.1, p.448)

- $\sin(150^\circ) =$
- $\cos(\frac{5\pi}{3}) =$
- $\tan(120^\circ) =$
- $\sin(\frac{5\pi}{4}) =$

3. **(T3.5, E, CI)** Sketch the following angles in standard position:

(Oxford, 13.4, p.462)

75°	-100°	250°	-270°
$\frac{\pi}{6}$	$-\frac{5\pi}{6}$	$\frac{11\pi}{6}$	$-\frac{\pi}{3}$

4. **(T4.4, R, CA)** A psychologist wants to investigate the relationship between the IQ of a child and the IQ of their mother. She measures the IQ of a sample of 8 children and mothers.

(Oxford, 10.1, p.332)

Child's IQ, x	87	91	94	98	103	108	111	123
Mother's IQ, y	94	96	89	102	98	94	116	117

- Write down the correlation coefficient between x and y .
- Find the regression line of y on x
- Use the regression line to estimate the IQ of the mother of a child with an IQ of 100
- Using your answer to part a, explain how accurate you think this estimate is likely to be.

5. **(T2.11, E, CI)** For each function, write a single equation to represent the given combination of transformations. (Oxford, 1.6, p.21)
- $f(x) = x$, reflected in the y-axis, stretch vertically by a factor of 2, stretch horizontally by a factor of $\frac{1}{3}$ and translated 3 units left and 2 units up.
 - $f(x) = x^2$, reflected in the x-axis, stretched vertically by a factor of $\frac{1}{4}$, stretched horizontally by a factor of 3, translated 5 units right and 1 unit down.
6. **(T1.3, E, CA)** The sum of the first five terms of a geometric series is 3798, and the sum to infinity is 4374. Find the sum of the first seven terms. (Oxford, 6.6, p.175)
7. **(T3.2, R, CA)** Leena sees a tree in a field $S40^\circ E$ from where she is standing. She then walks 2km down the road due south from her starting position and notices that the tree is now $S75^\circ E$ from her new position. (Oxford, 11.5, p.386)
- Show/explain why $S40^\circ E$ is the same as a bearing of 140° . What bearing corresponds to a direction of $S75^\circ E$?
 - How far is the tree from both her first and second positions on the road?
8. **(T2.11, E, CI)** Given the function $f(x)$ as seen in the graph. (Oxford, 1.6, p.21)

- Let $h(x) = -f(x+2) + 5$. In your notes sketch the graph of $h(x)$.
- Let $g(x) = 2h(x+1)$. The point $A(-2, 3)$ on the graph of $f(x)$ is transformed onto h , and then g . Let A_1 be the point on $h(x)$, and A_2 be the point on $g(x)$. Determine the coordinates of A_1 and A_2 .

