

Plotting equations worksheet answers

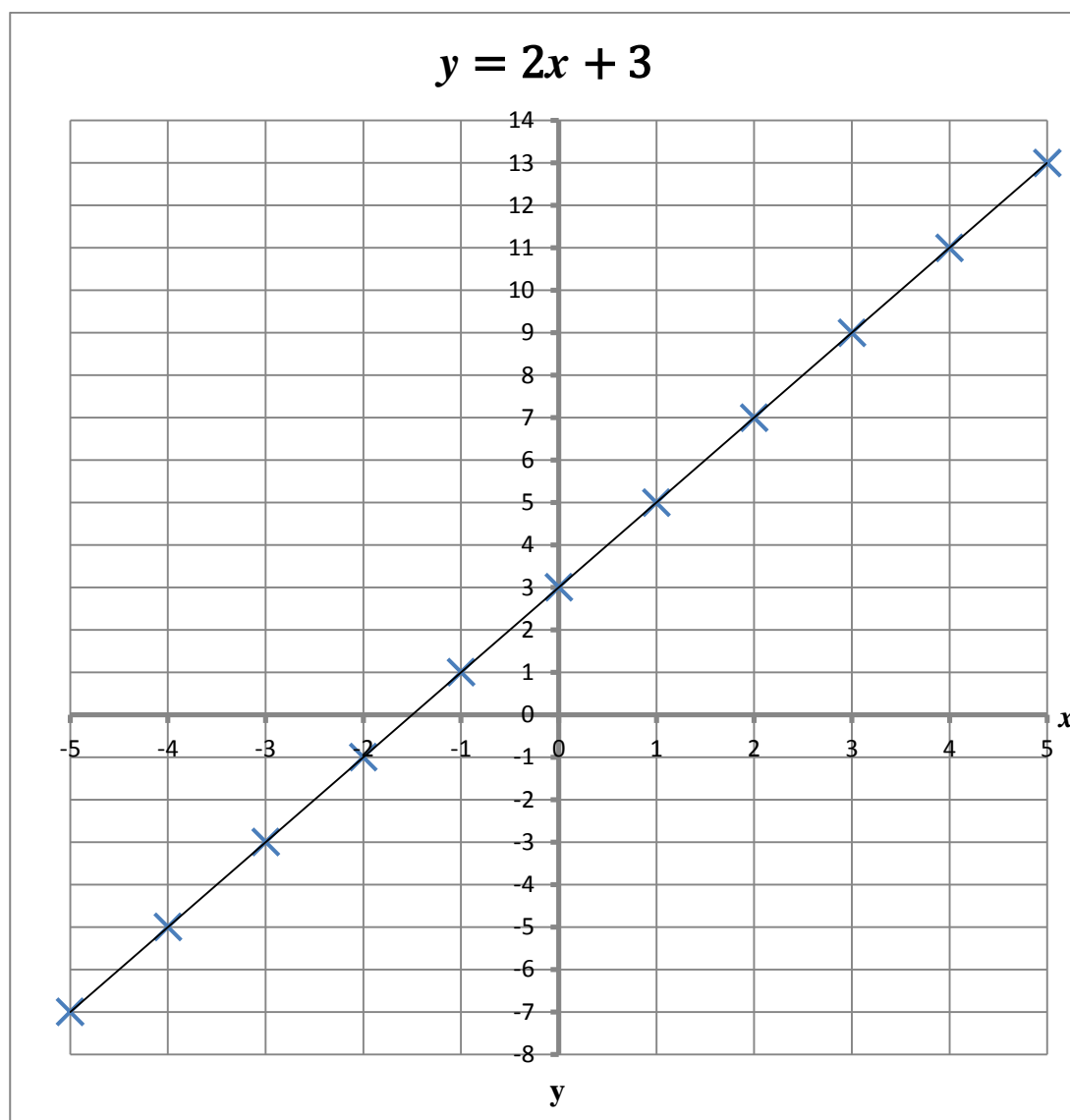
Mathematics for A-level Science

Practice your understanding

On a separate sheet of paper, plot the following equations on separate axis for $-5 < x < 5$

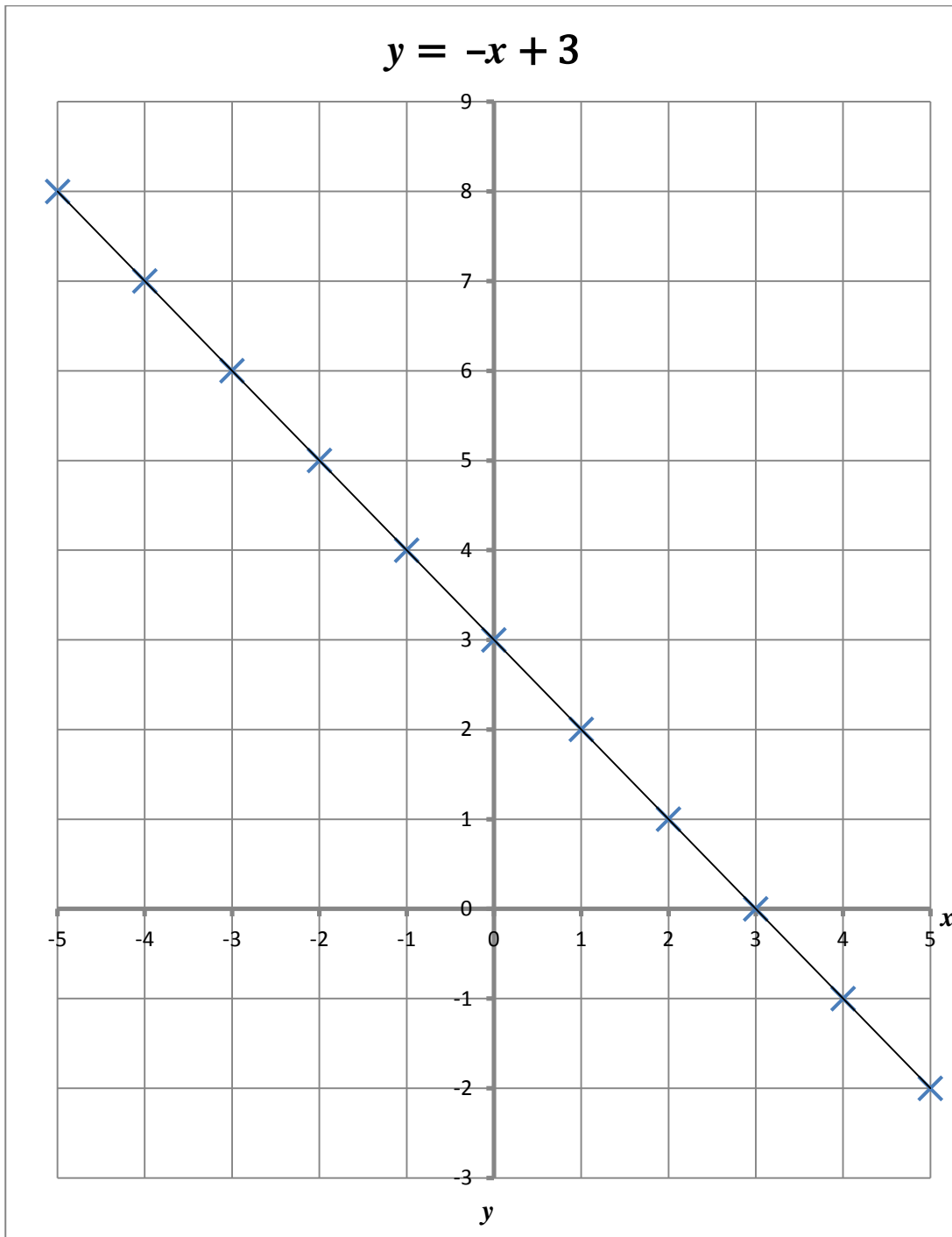
1. $y = 2x + 3$

x	-5	-4	-3	-2	-1	0	1	2	3	4	5
y	-7	-5	-3	-1	1	3	5	7	9	11	13



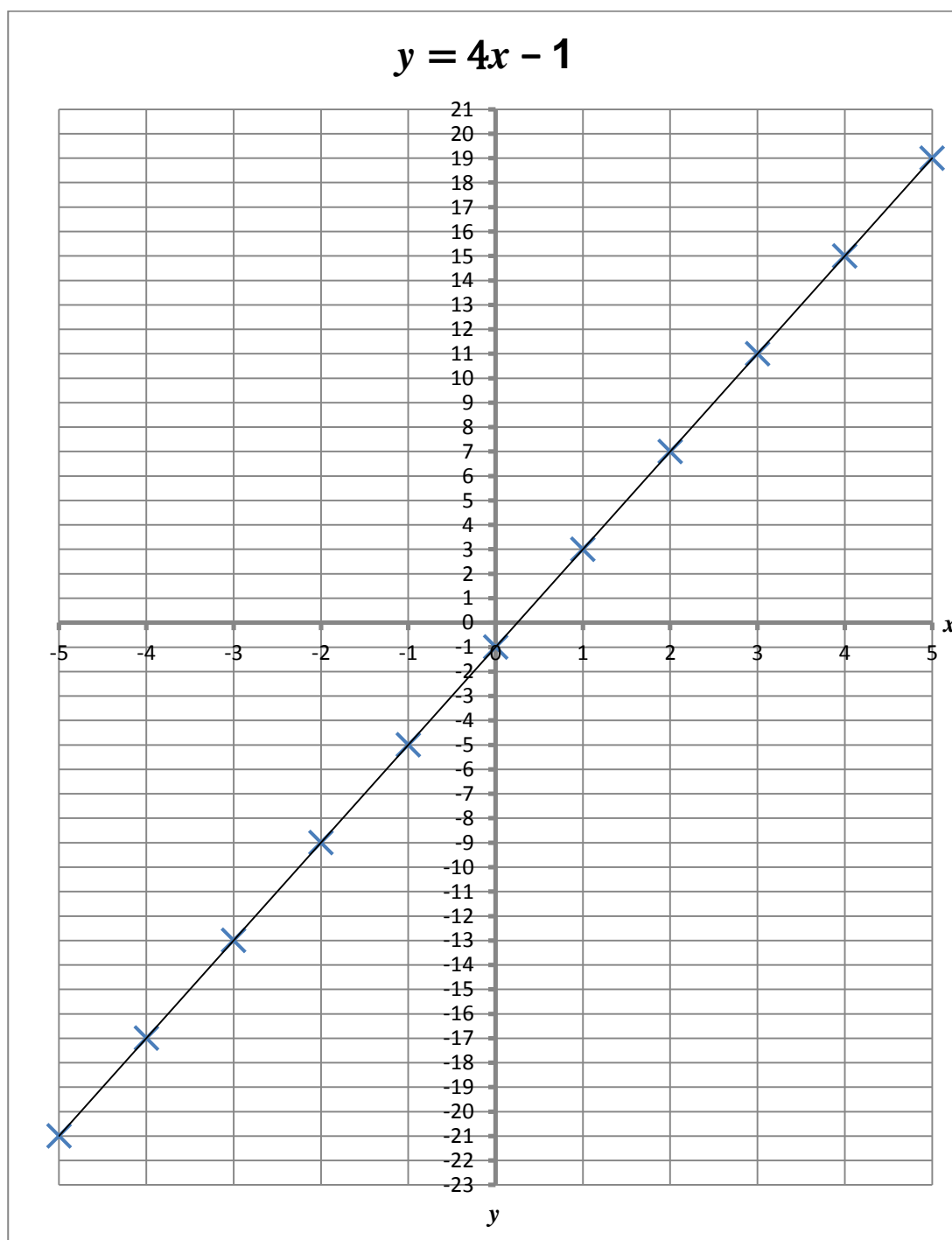
2. $y = -x + 3$

x	-5	-4	-3	-2	-1	0	1	2	3	4	5
y	8	7	6	5	4	3	2	1	0	-1	-2



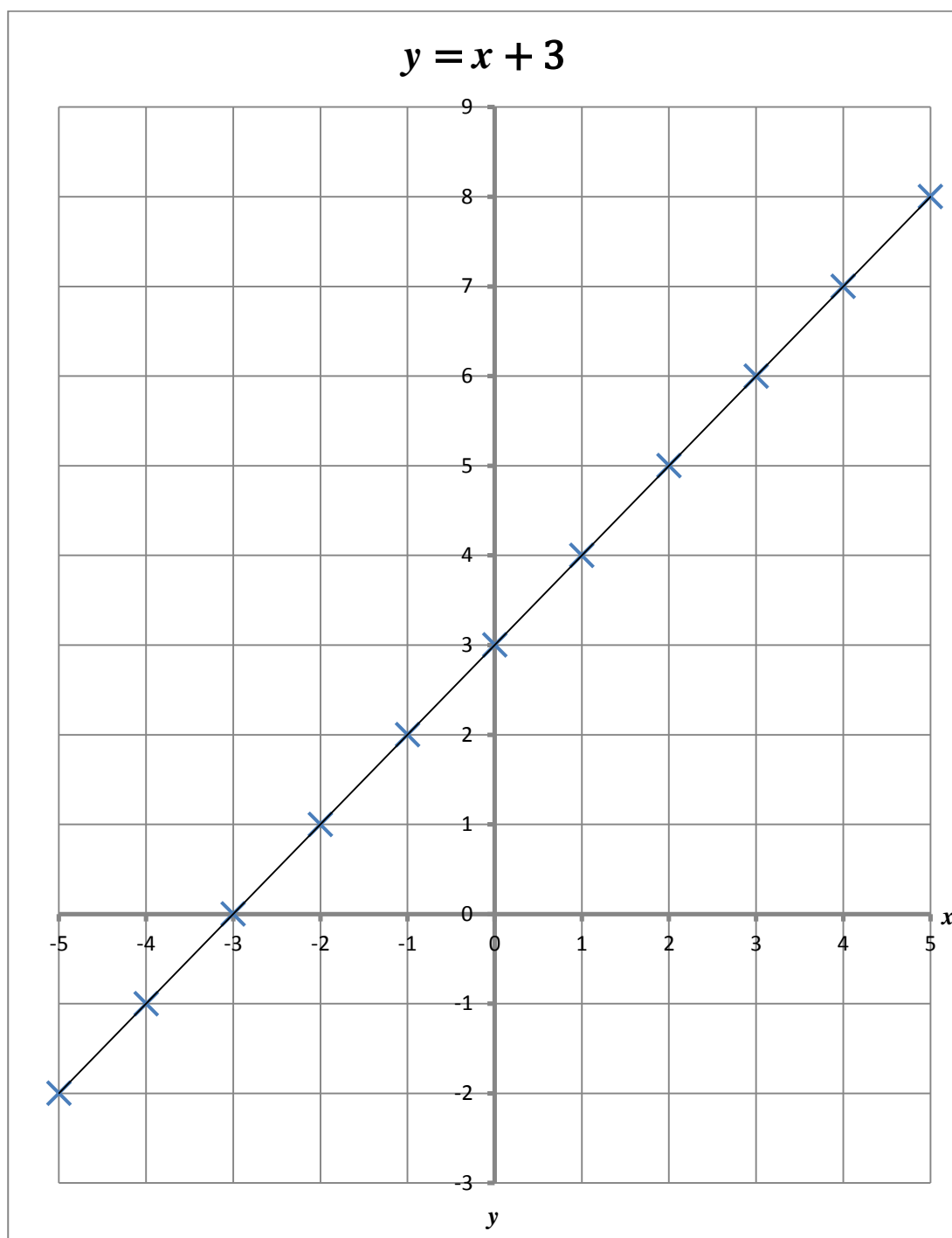
3. $y = 4x - 1$

x	-5	-4	-3	-2	-1	0	1	2	3	4	5
y	-21	-17	-13	-9	-5	-1	3	7	11	15	19



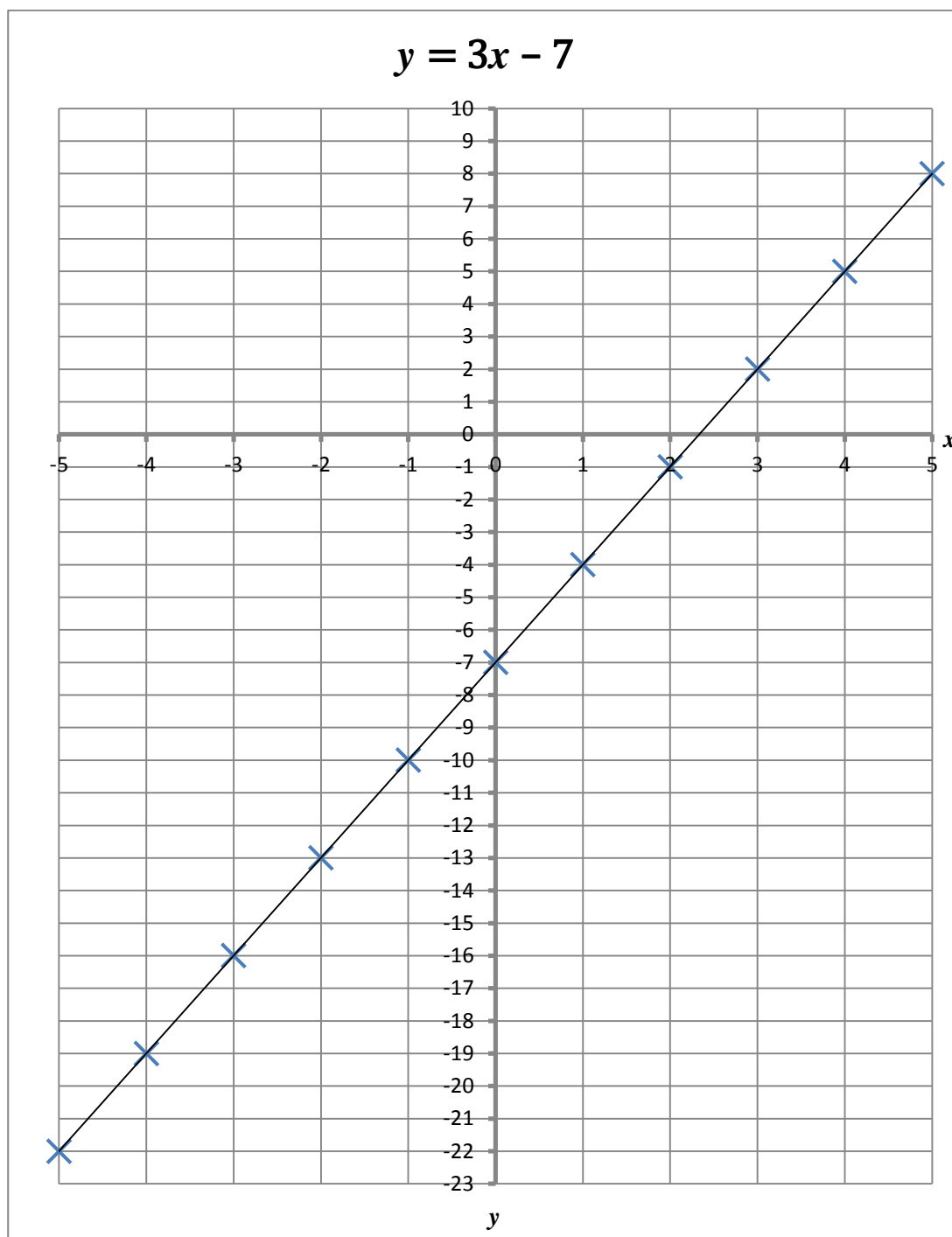
4. $y = x + 3$

x	-5	-4	-3	-2	-1	0	1	2	3	4	5
y	-2	-1	0	1	2	3	4	5	6	7	8



5. $y = 3x - 7$

x	-5	-4	-3	-2	-1	0	1	2	3	4	5
y	-22	-19	-16	-13	-10	-7	-4	-1	2	5	8



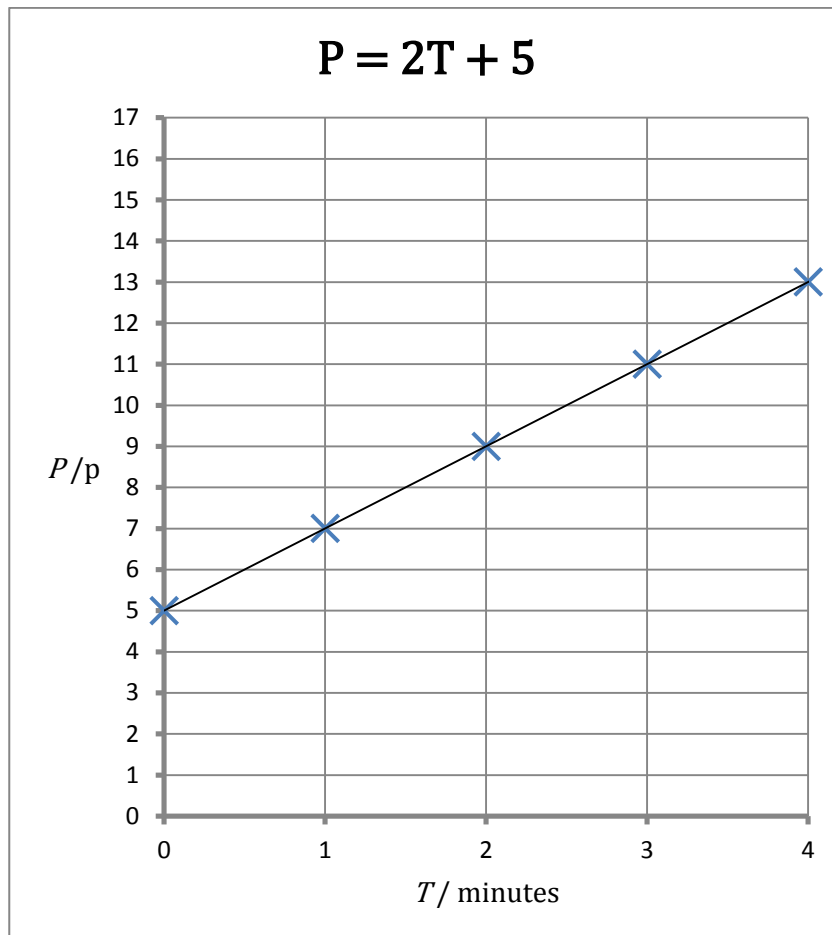
6. The price of a phone call is made up of a connection charge of 5p, and an additional cost of 2p per minute. Letting P represent the total price and T the length of the phone call, explain the equation $P = 2T + 5$

Plot this equation for $0 < T < 4$

T	0	1	2	3	4
P	5	7	9	11	13

The +5 term is the connection charge. This is a fixed cost, therefore the amount charged for 0 minutes, or the y intercept.

The gradient is then 2p/minute, hence the $2T$ term.

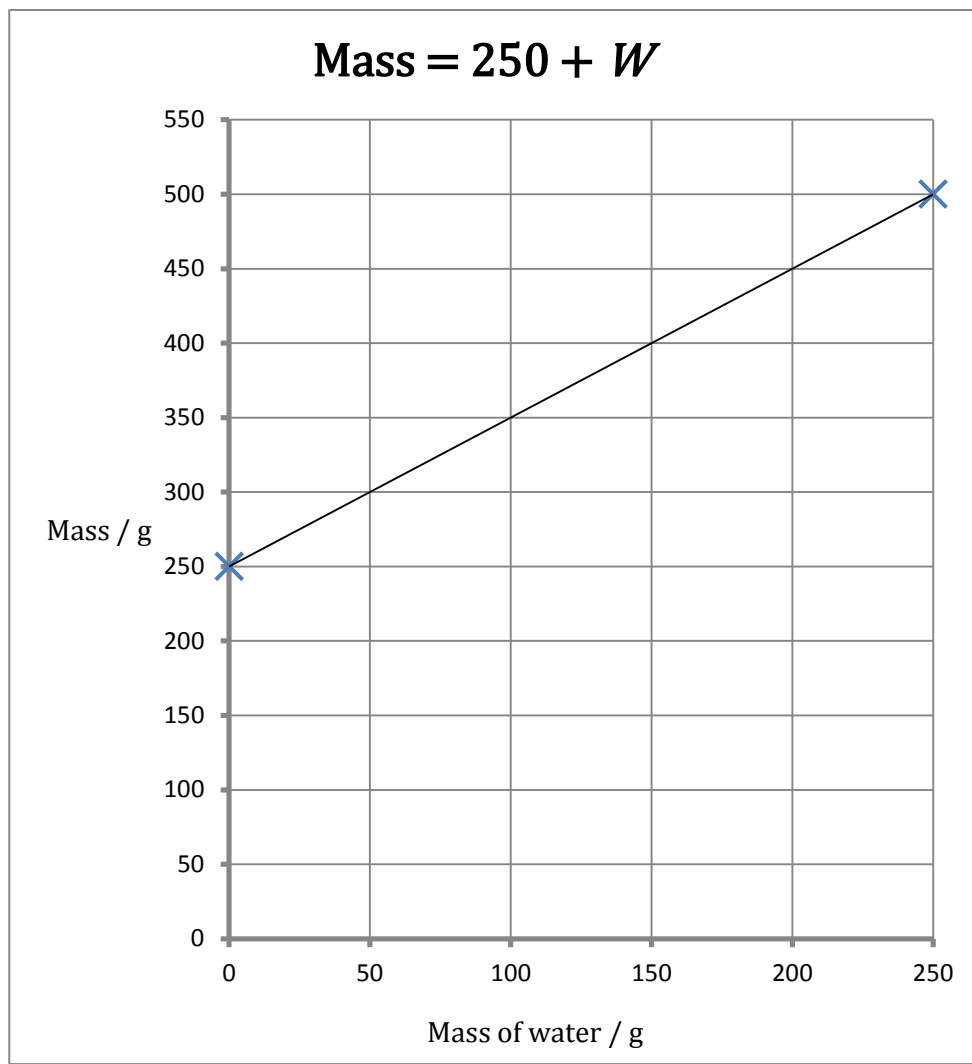


7. The mass of a beaker filled with water is made up of the mass of the glass beaker and 1 extra gram per ml of water inside the beaker.

For a beaker that has a mass of 250 g, explain the equation $Mass = 250 + W$

Plot this relationship for $0 < W < 250$

250 is the y intercept, as this is the mass of the empty beaker in grams.
Each gram of water adds 1 g, hence the $+ W$ term.



8. To convert between the Celsius and Fahrenheit temperature scales, there exists the formula $F = \frac{9}{5}C + 32$

Plot this relationship for $0 < C < 100$

