

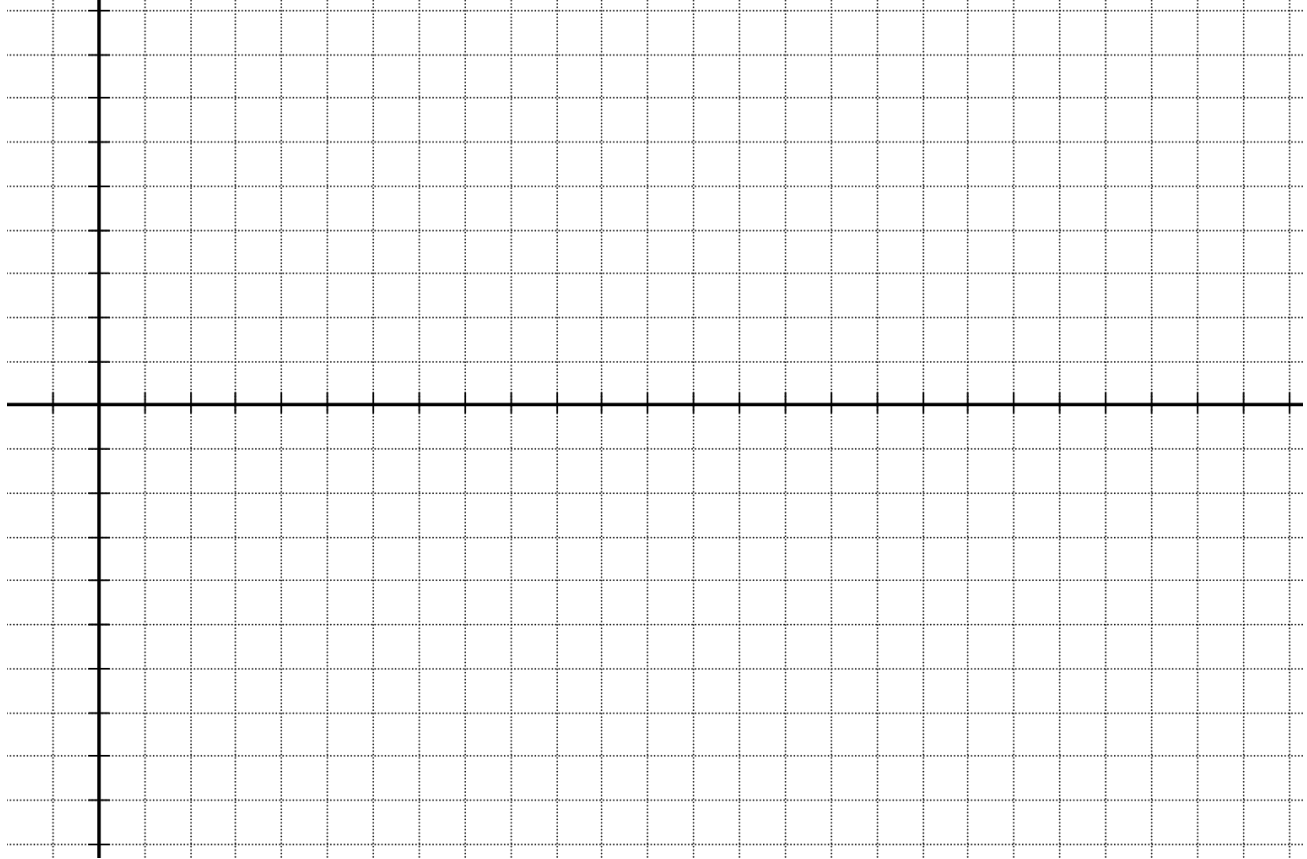
Unit 7 Linear Relations

7.2 Interpreting Graphs

Ex. A weather balloon recorded the air temperature at different altitudes. The data, shown in the table below, approximately represents a linear relationship.

Altitude, a (m)	350	750	1000	1500	1800
Temperature, t ($^{\circ}\text{C}$)	11.4	5.5	1.8	-5.8	-10.2

a) Graph the data on the grid provided:



b) **Interpolate** the approximate value for the air temperature when the balloon was at a height of 600m? 1200m?

Interpolate:

c) What was the approximate altitude of the balloon at an air temperature of 2°C ? -7.5°C ?

d) **Extrapolate** the approximate value for the air temperature when the balloon was at a height of 2000m? 0m?

Extrapolate:

e) What was the approximate altitude of the balloon at an air temperature of 14°C ? -20°C ?

Ex. A spring extends after weights are hung on it. The spring fully compressed is 4 cm long and fully extended is 14 cm long.

a) Is it reasonable to interpolate data from this graph?

b) What weight fully extends the spring?

c) What is the spring's length when a 25 kg weight is attached? When a 20 kg weight is attached?

d) Is it reasonable to extrapolate data from this graph?