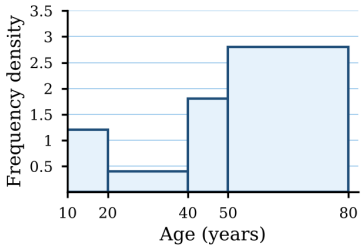
**Day 174** **A Tier 10-a-day**

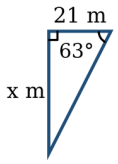
**1** The histogram shows information about the age of some items.
(a) Work out the number of items with a age in the class 40 to 50 years.
(b) Work out an estimate for the number with a age greater than 45 years.




**2** P is the point (−5, 3) and Q is the point (−11, 11).
(a) Find the midpoint of PQ.
(b) Work out the length of PQ. Give your answer as a whole number.

**3** Work out $(2.5 \times 10^6)^3$
Give your answer in standard form.

**4** Work out the value of x. (Calculator)
Give your answer to 3 significant figures.
The diagram is not drawn accurately.




**5** Simplify fully

$$\frac{4x^2 + 15x - 25}{x^2 + 3x - 10}$$

| Day 174 | A Tier 10-a-day |
|---|---|
| **6** Triangle PQR has vertices P(−2, −2), Q(5, −2), R(1, −3).<br>The triangle is enlarged with scale factor 3 and centre (3, 2).<br>Write down the coordinates of the vertices of the image. | |
| **7** Solve $3^{x+2} = 9^{x}$ | |
| **8** Noah and Femi each invest £1000 for 2 years. (Calculator)<br>Noah's account pays 5% simple interest per year.<br>Femi's account pays 5% compound interest per year.<br>Work out how much more interest Femi earns than Noah. | |
| **9** Write the recurring decimal $0.\dot{6}4\dot{6}$ as a fraction in its simplest form. | |
| **10** Solve $\frac{5}{(x-4)} + \frac{6}{(x+4)} = 1$ | |