## HOME EXERCISE 12

## Set out carefully all appropriate working.

Do not use a calculator in questions $1,2,3$ or 4 .
Use a calculator in question 5.

1. Evaluate:

$$
\begin{equation*}
3 \frac{1}{6} \square \frac{3}{4} \square \frac{5}{9} \tag{3}
\end{equation*}
$$

2. 



Form an equation and solve for x :
3.


The box plot shown illustrates some statistical results.
The range of the results is 45 and the semi-interquartile range is 13 .
(a) Find the values of A and B .
(b) State the percentage of the results that lie between 16 and 24.
4.


In the diagram shown lines BC and DE are parallel.
(a) Calculate the length of side BC.
(b) Triangle ADE has an area of $90 \mathrm{~cm}^{2}$. Calculate the area of triangle ABC .
(c) Find the area of trapezium BCED.
5. Light travels at a speed of $9 \cdot 461 \sqcap 10^{12}$ kilometres per year.

A star is a distance of $1 \cdot 507 \Pi 10^{14}$ kilometres from Earth.
How long, in years, does it take light from the star to reach Earth?
Write your answer correct to $\mathbf{3}$ significant figures.

