

Expanding Trinomials

$$\begin{aligned}\text{Ex 1} \quad & (2x+3)(x+1)(3x+4) \\ &= (2x^2+3x+2x+3)(3x+4) \\ &= (2x^2+5x+3)(3x+4) \\ &= \begin{array}{r} 6x^3 + 15x^2 + 9x \\ + 8x^2 + 20x + 12 \\ \hline 6x^3 + 23x^2 + 29x + 12 \end{array}\end{aligned}$$

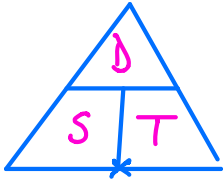
$$\begin{aligned}\text{Ex 2} \quad & (2x-1)(x+4)(x-3) \\ &= (2x^2-x+8x-4)(x-3) \\ &= (2x^2+7x-4)(x-3) \\ &= \begin{array}{r} 2x^3 + 7x^2 - 4x \\ - 6x^2 - 21x + 12 \\ \hline 2x^3 + x^2 - 25x + 12 \end{array}\end{aligned}$$

$$\begin{aligned}\text{Exercise} \quad & (3x+1)(x+3)(2x+5) \\ &= (3x^2+x+9x+3)(2x+5) \\ &= (3x^2+10x+3)(2x+5) \\ &= 6x^3 + 20x^2 + 6x\end{aligned}$$

$$+ 15x^2 + 50x + 15$$

$$= 6x^3 + 35x^2 + 56x + 15$$

Compound Measures

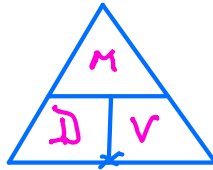


$$S = \frac{D}{T}$$

$$T = \frac{D}{S}$$

$$D = S \times T$$

Speed

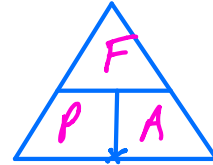


$$D = \frac{M}{V}$$

$$V = \frac{M}{D}$$

$$M = D \times V$$

Density



$$P = \frac{F}{A}$$

$$A = \frac{F}{P}$$

$$F = P \times A$$

Pressure

$$\text{Avg Speed} = \frac{\text{Total Dist}}{\text{Total Time}}$$

$$\text{Avg Density} = \frac{\text{Total Mass}}{\text{Total Vol}}$$

Ex1 If I travel from A to B at a speed of 40 km/h for 2 hours and then travel 60 km from B to C at 20 km/h, what was my average speed.

	speed	time	distance
A to B	40 km/h	2 hrs	80 km
B to C	20 km/h	3 hrs	60 km
Total		5 hrs	140 km

$$\text{Avg Speed} = \frac{\text{Total Dist}}{\text{Total Time}} = \frac{140}{5} = 28 \text{ km/h}$$

10 cm^3 of A with a density of 2 g/cm^3 is mixed with a vol of 20 cm^3 of B which has a mass of 30 g and 40 cm^3 of C which a density of 8 g/cm^3 . Find the density of the resulting compound.

	density	mass	vol
A	2 g/cm^3	20 g	10 cm^3
B		30 g	20 cm^3
C	8 g/cm^3	320 g	40 cm^3
Tot		370 g	70 cm^3

$$\text{Density} = \frac{\text{Total mass}}{\text{Total Vol}} = \frac{370}{70} = 5.29 \text{ g/cm}^3$$

Bounds

I run 100 m to the nearest metre
in 12.8 s to the nearest 0.1 of a second

Find my max and min speeds

$$99.5 \text{ m} \leq \text{dist} < 100.5 \text{ m}$$

$$12.75 \leq \text{time} < 12.85$$

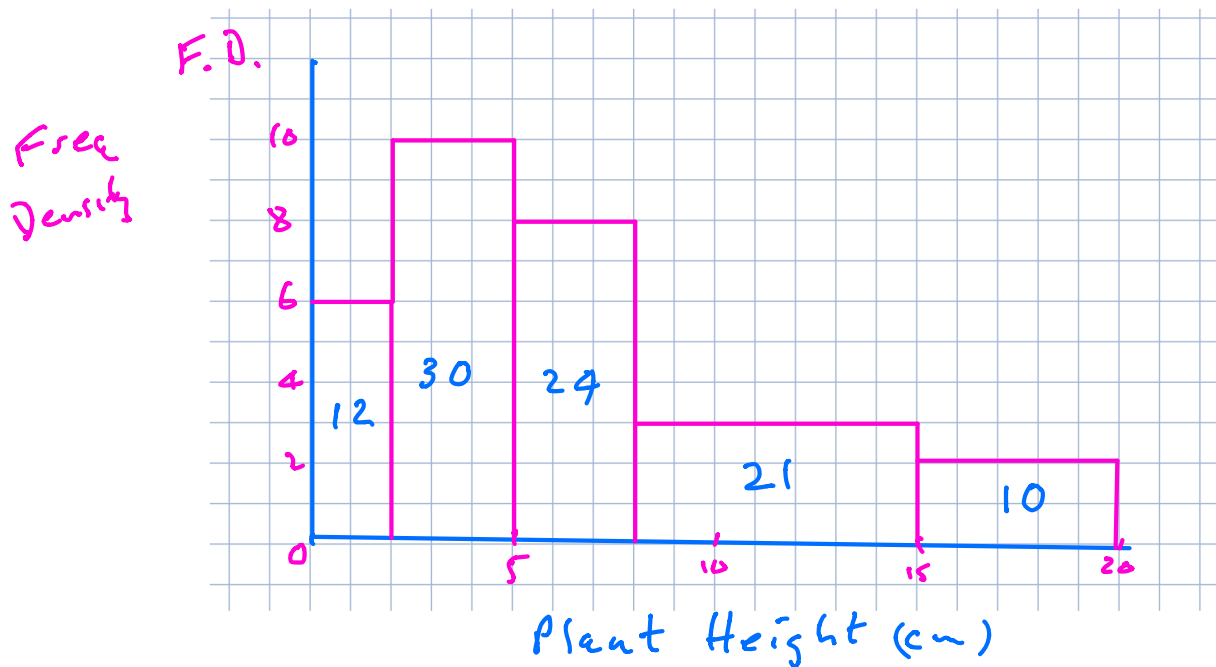
$$\text{speed} = \frac{\text{dist}}{\text{time}}$$

$$\text{max speed} = \frac{100.5}{12.75} = 7.882 \text{ ms}^{-1}$$

$$\text{min speed} = \frac{99.5}{12.85} = 7.743 \text{ ms}^{-1}$$

Histograms

Frequency represented by area



I select a plant at random

Find probability it is greater than 8cm tall $= \frac{31}{97}$
