

Set 2. Higher. 2H.

$$100 \text{ cm} = 1 \text{ m}$$

$$10000 = 1 \text{ m}^2$$

1.  $p = \frac{F}{A}$

$$A = 1500 \text{ cm}^2$$

$$p = 28 \text{ newtons / m}^2$$

$$F = p \times A$$

$$= 28 \times 0.15$$

$$= \underline{\underline{4.2}}$$

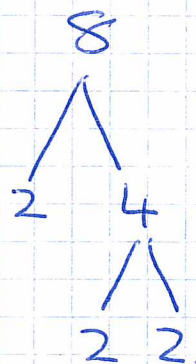
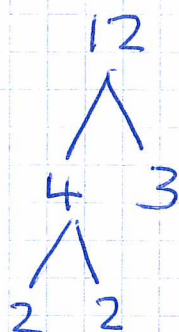
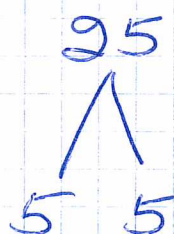
$$\frac{1500}{10000} = 0.15$$

2. W 25 50 75 100 125

✓ S 12 24 36 48 60 72 84 96 81

G 8 16 24 eh

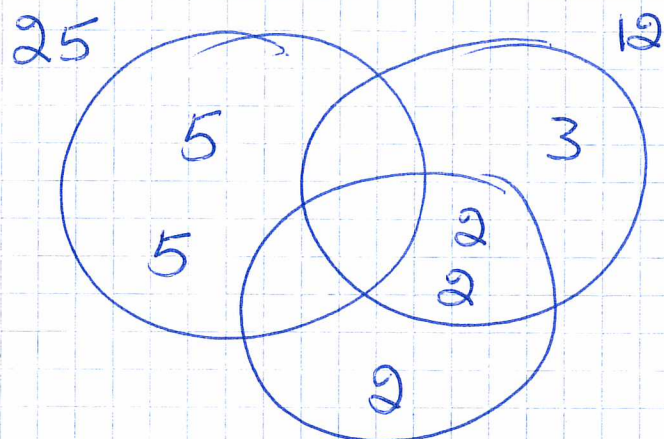
LCM 25, 12, 8,



$$W \quad 600 \div 25$$

$$S \quad 600 \div 12$$

$$G \quad 600 \div 8$$

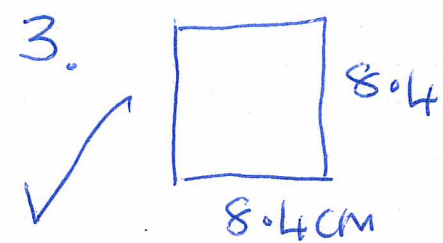


a) =

W	24
S	50
G	75

$$LCM = 5 \times 5 \times 2 \times 2 \times 2 \times 3$$

b) = 600



$$d^2 = 8.4^2 + 8.4^2$$

$$d = \sqrt{141.12}$$

$$= 11.879$$

$$d = \underline{\underline{11.9 \text{ cm}}}$$

4 R : B

3 : 1

x30

90 : 30

$$3+1=4 \quad \frac{120}{4} = 30$$

$\frac{1}{3} \times 90 = 30$  taken  $\therefore$  60 left.

$0.8 \times 30 = 24$  taken  $\therefore$  6 left.

60 : 6

10 : 1

5

✓ Sm circle  $\Rightarrow r = 5$

✓ Lg circle  $\Rightarrow r = 6$

$$\pi \times 5^2 = 25\pi$$

$$\pi \times 6^2 = 36\pi$$

$$36\pi - 25\pi = 11\pi = 34.6 \text{ (3 sf)}$$

6  $\rightarrow 3a + 4p = 184$

$5a + 2p = 176$

x 2

$3a + 4p = 184$

$10a + 4p = 352$

$\uparrow -$

$7a = 168$

$a = 24$

$3 \times 24 + 4p = 184$

$4p = 112$

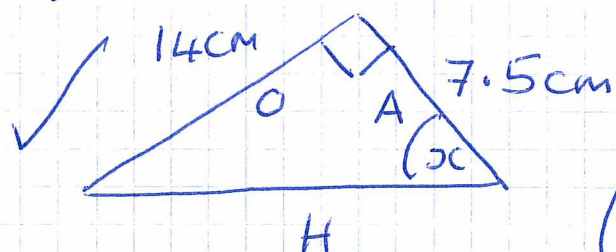
$p = 28$

apple = 24p.

pear = 28p



7.



$$\tan x = \frac{14}{7.5}$$

$$(\tan^{-1}) x = 61.8$$

$$x = \underline{\underline{62^\circ}}$$

8

$$\text{Perimeter A} = x + 3x + 1 + 3x - 2 + 3x + 1$$

$$= 10x$$

$$B = 2(2x - 3) + 2(4x - 5)$$

$$= 4x - 6 + 8x - 10$$

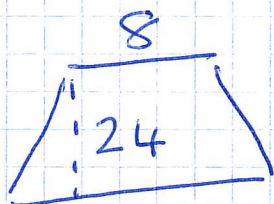
$$= 12x - 16$$

$$10x = 12x - 16$$

$$16 = 2x$$

$$x = \underline{\underline{8}}$$

A



$$3 \times 8 - 2 = 22$$

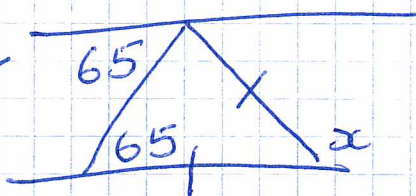
$$A = \frac{1}{2} h(a+b)$$

$$= \frac{1}{2} \times 24(8+22)$$

$$= 12 \times 30$$

$$A = \underline{\underline{360 \text{ cm}^2}}$$

9.



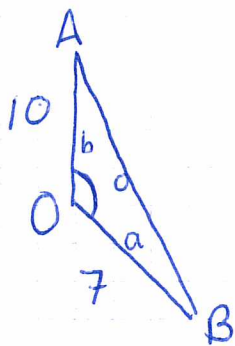
$$BFG = 65 \text{ (alternate } \angle \text{)}$$

$$\therefore FBG = 65 \text{ (Iso } \Delta \text{)}$$

$$BGF = 180 - 130 = 50 \text{ (}\Delta = 180 \text{)}$$

$$\therefore x = 180 - 50 = 130 \text{ (}\angle \text{ str line} = 180 \text{)}$$

10.



$$AOB = 5 \left( \frac{360}{12} \right) = 30 \times 5$$

$$= \underline{\underline{150}}$$

↑  
(5 mins)

Cosine Rule  $a^2 = b^2 + c^2 - 2bc \cos A$

$$\cos A = \frac{b^2 + c^2 - a^2}{2bc}$$

$$AB^2 = 10^2 + 7^2 - (2 \times 10 \times 7 \times \cos 150)$$

$$= 100 + 49 + 121.24$$

$$= 270.243$$

$$AB = \underline{\underline{16.4}}$$

11. Plot graph at top of intervals

✓ 10% of 200 = 20

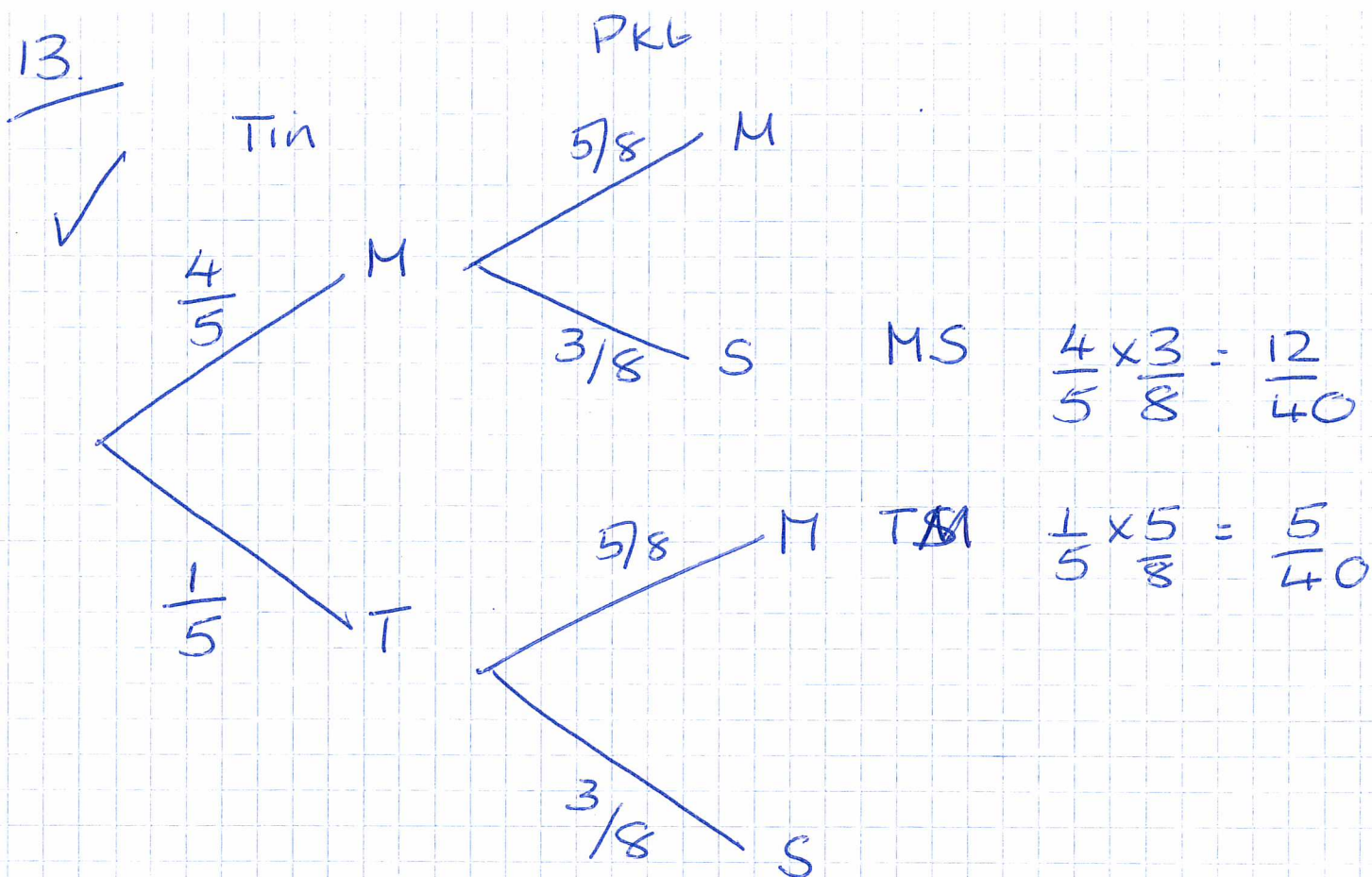
Age at 65 2 190 i.e. 10 i.e. NO

12.  $0.7 \times ? = 17920$

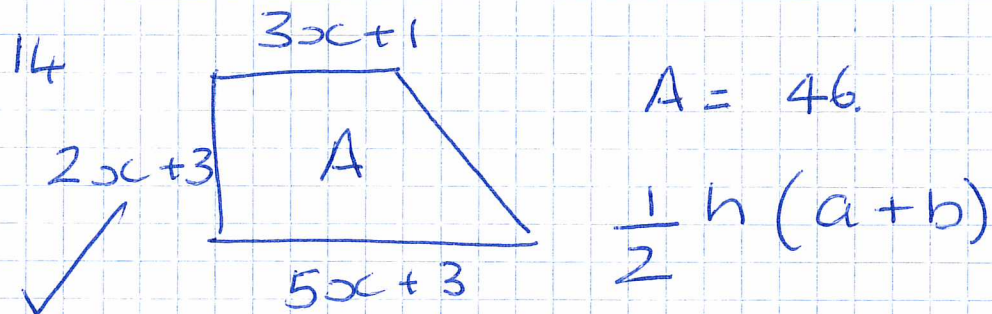
$$? = 25600 \leftarrow \frac{17920}{0.7}$$

✓





$$(MS) \cup (SM) = \frac{12}{40} + \frac{5}{40} = \frac{17}{40}$$



$$\frac{1}{2} \times (2x+3)(3x+1+5x+3)$$

$$= \frac{1}{2} (2x+3)(8x+4)$$

$$= \frac{1}{2} (16x^2 + 8x + 24x + 12)$$

$$= \frac{1}{2} (16x^2 + 32x + 12)$$

$$8x^2 + 16x + 6 = 46$$

$$8x^2 + 16x - 40 = 0$$

$$8(x^2 + 2x - 5) = 0$$

$$x^2 + 2x - 5 = 0$$

$$b^2 = 4$$

$$a = 1 \quad b = 2 \quad c = -5$$

$$4ac = 4 \times 1 \times (-5) = -20$$

$$\frac{-b \pm \sqrt{b^2 - 4ac}}{2a} = \frac{-2 \pm \sqrt{24}}{2}$$

$$\begin{aligned} b^2 - 4ac &= 4 - (-20) \\ &= 24 \end{aligned}$$

$$+1.45 \quad -3.45$$

15.  $y = f(x-5) \rightarrow +5$  Right

$(4, 3)$  (Ref y axis)

16.  $x = 0.0\dot{1}5$   $\times 100$  2 numbers in pattern

$$= 0.0151515$$

$$x = 0.01515$$

$$100x = 1.51515$$

$$99x = 1.5$$

$$x = \frac{1.5}{99}$$

$$= \frac{1}{66}$$

17.  $P \propto \frac{1}{x^2}$

$$P = \frac{k}{x^2}$$

$$6 = \frac{k}{25}$$

$$\begin{aligned} k &= 6 \times 25 \\ &= 150 \end{aligned}$$

$$x = 5 \quad P = 6$$

When  $x = 8$

$$P = \frac{150}{x^2}$$

$$P = \frac{150}{8^2} = \frac{150}{64}$$

$$P = 2.34 //$$