

| | | | | | | | | | | | | | | | |
|-----|---|---|---|-------|----|----|---|----|----|-------|----|----|---|---|--|
| 19. | <p>a) <i>km tonnes amount</i></p> <table border="0"> <tr> <td>28</td> <td>48</td> <td>24000</td> </tr> <tr> <td>49</td> <td>96</td> <td>?</td> </tr> </table> $= \frac{49}{28} \times \frac{96}{48} \times 24000$ $= 84,000$ <p>b) 8 tonnes \equiv 3000</p> $96 \text{ tonnes} \equiv \frac{96 \times 3000}{8}$ $= 36,000$ $\text{total profit} = 84000 - 36000$ $= 48000$ <p>c) <i>km tonnes amount</i></p> <table border="0"> <tr> <td>28</td> <td>48</td> <td>24000</td> </tr> <tr> <td>84</td> <td>48</td> <td>?</td> </tr> </table> $\frac{48}{48} \times \frac{84}{28} \times 24000$ $= 72000$ <p>144% rep 72000</p> <p>100% rep ?</p> $= \frac{100 \times 72000}{144}$ $= 50,000$ | 28 | 48 | 24000 | 49 | 96 | ? | 28 | 48 | 24000 | 84 | 48 | ? | <p>M1</p> <p>M1</p> <p>A1</p> <p>M1</p> <p>A1</p> <p>M1</p> <p>A1</p> <p>B1</p> <p>M1</p> <p>A1</p> | |
| 28 | 48 | 24000 | | | | | | | | | | | | | |
| 49 | 96 | ? | | | | | | | | | | | | | |
| 28 | 48 | 24000 | | | | | | | | | | | | | |
| 84 | 48 | ? | | | | | | | | | | | | | |
| 20. | <p>a) $y = 2x + 3$</p> <table border="1"> <tr> <td>X</td> <td>0</td> <td>1</td> </tr> <tr> <td>y</td> <td>3</td> <td>5</td> </tr> </table> $y = \frac{-x}{2} + 3$ <table border="1"> <tr> <td>X</td> <td>0</td> <td>2</td> </tr> <tr> <td>y</td> <td>3</td> <td>2</td> </tr> </table> <p>b) (0,3)</p> <p>c) $y=0$ $x=3$</p> <p>d) $113^0 \pm 1$</p> | X | 0 | 1 | y | 3 | 5 | X | 0 | 2 | y | 3 | 2 | <p>B1</p> <p>B1</p> <p>S1</p> <p>L1L1</p> <p>B1B1</p> <p>B1</p> <p>B1B1</p> | <p>For table of values</p> <p>For table of values</p> <p>Scale</p> <p>Both lines correctly drawn</p> |
| X | 0 | 1 | | | | | | | | | | | | | |
| y | 3 | 5 | | | | | | | | | | | | | |
| X | 0 | 2 | | | | | | | | | | | | | |
| y | 3 | 2 | | | | | | | | | | | | | |
| | | 10 | | | | | | | | | | | | | |
| 22. | <p>a)</p> <p>b)</p> $\text{area } A = \frac{1}{2} \times 200 \times 160 = 1600$ | <p>S1</p> <p>B1</p> <p>B1</p> <p>M1</p> | <p>Scale</p> <p>Offsets</p> <p>Baseline</p> | | | | | | | | | | | | |

| | | | |
|-----|---|--|---|
| | $\text{area } B = \frac{160 + 80}{2} \times 80 = 9600$ $\text{Area } C = \frac{1}{2} \times 120 \times 80 = 4800$ $\text{area } D = \frac{1}{2} \times 40 \times 200 = 400$ $\text{area } E = \frac{200 + 80}{2} \times 280 = 44000$ $\text{Area } F = \frac{1}{2} \times 40 \times 80 = 1600$ $\text{sum} = 79200\text{m}^2$ $\rightarrow \frac{79200\text{m}^2}{10,000\text{m}^2}$ $= 7.92\text{ha}$ | | |
| | | 10 | |
| 23. | a) b) $\text{area of squares} = 8 \times 8 \times 5 = 320$ $\text{area of triangles} = \frac{1}{2} \times 8 \times 3 \times 4 = 48$ $\text{sum} = 368\text{cm}^3$ c) $\frac{1}{10,000} = \frac{368}{x}$ $x = 3680,000\text{cm}^2$ $10000\text{cm}^2 = 1\text{m}^2$ $3680000\text{cm}^2 = \frac{3680000 \times 1}{10000}$ $= 368\text{m}^2$ | | Correct net |
| | | 10 | |
| 24. | a) water: Alcohol $1 : 4$ $\text{mass of water} = \frac{1\text{g}}{\text{cm}^3} \times 1$ $= 1\text{g}$ $\text{mass of alcohol} = \frac{0.8\text{g}}{\text{cm}^3} \times 4$ $= 3.2\text{g}$ $\text{density of mixture} = \frac{\text{mass}}{\text{vol}}$ $\frac{1 + 3.2}{1 + 4} = \frac{4}{5}$ | | |

| | | | |
|----|---|----|--|
| | $= \frac{0.84g}{cm^3}$ | A1 | |
| | $\text{density of stone} = \frac{8.6g}{cm^3}$ | | |
| | $\text{vol. of stone} = \frac{129}{8.6}$ | M1 | |
| | $= 15cm^3$ | A1 | |
| | $\text{new reading} = 40 + 15$ | M1 | |
| | $= 55cm^3$ | A1 | |
| c) | $\frac{1g}{cm^3} \rightarrow \frac{1000kg}{m^3}$ | | |
| | $\frac{8.6g}{cm^3} \rightarrow \frac{\frac{8.6g}{cm^3} \times \frac{1000kg}{m^3}}{\frac{1g}{cm^3}}$ | M1 | |
| | $= \frac{8600kg}{m^3}$ | A1 | |
| | | 10 | |