

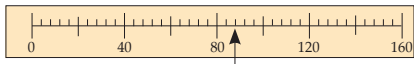
Answers

Page 4

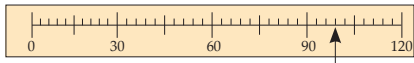
1. A = 600 psi B = 1800 psi
C = 2650 psi D = 3950 psi
E = 4500 psi F = 4750 psi
2. A = 72, B = 36, C = 2.65
3. A = 20 cm B = 50 cm
C = 150 cm D = 15 cm
E = 87.5 cm F = 172.5 cm
G = 0.07 m H = 0.15 m
I = 0.335 m
4. A = 0.25 B = 0.7
C = 1.3 D = 1.75
E = 3.2
5. A = 120 g B = 250 g
C = 510 g D = 640 g
E = 850 g

Page 5

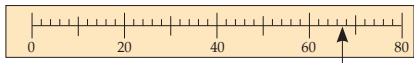
6.



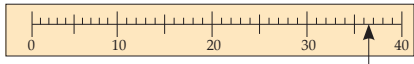
7.



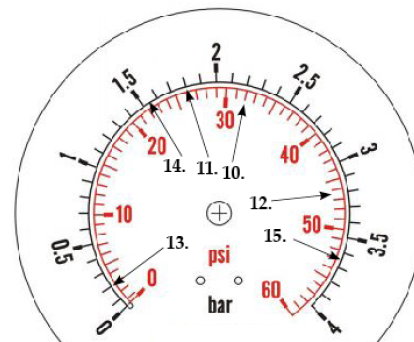
8.



9.



10. 11. 12. 13. 14. 15.



Page 8

16. 1.5 cm
17. 0.786 km
18. 0.0156 t
19. 2700 m²
20. 15.7 m
21. 45 kg

Page 8 cont...

22. 0.129 L
23. 1000 × 1000 = 1 000 000 g
24. 4500 cm
25. 48.9 cm = 489 mm
26. 2.33 m = 233 cm
27. 5.28 km = 5280 m
28. 1.221 L = 1221 mL
29. 2700 mg = 2.7 g
30. 600 g
31. 350 kg
32. 17 450 mL
33. 1 500 cm³
34. 1.4 ha
35. 22 000 m²
36. 2.03 ha = 20 300 m²
37. 23 cm² = 2300 mm²
38. 17.5 L = 17 500 cm³
39. 0.562 m³ = 562 000 cm³

Page 9

40. grams
41. metres²
42. 1200 to 3000 grams or 1.2 to 3 kilograms.
43. 5 to 10 litres
44. 17 ¢
45. \$2.23
46. \$4475
47. 184 lots
48. 35 bags
49. 100 teaspoons
50. 400 shovels
51. 23 256 matches
52. 0.111 mm
53. 97 200 s = 27 hours
54. 133.33 h (133 h 20 min)
55. 200 000

Page 11

56. 15.5 mm ≤ x < 16.5 mm
57. 97.35 kg ≤ x < 97.45 kg
58. 65.775 m ≤ x < 65.785 m
59. 14.95 m ≤ x < 15.05 m
60. 2.5 h ≤ x < 3.5 h
61. 1534.5 km ≤ x < 1535.5 km
62. 18.335 cm ≤ x < 18.345 cm

Page 11 cont...

63. 0.445 L ≤ x < 0.455 L
64. 4.5 L ≤ x < 5.5 L
65. 83.5 ≤ x < 84.5 light years
66. 115 km ≤ x < 125 km
67. 16 450 km ≤ x < 16 550 km
68. 8.5 days ≤ x < 9.5 days
69. 4.995 m ≤ x < 5.005 m
70. 4.5 m ≤ x < 5.5 m
71. Error = ± 0.5 cm
72. Error = ± 0.5 kg
73. Error = ± 0.5 m
74. Error = ± 0.05 m
75. Error = ± 0.5 days
76. Error = ± 0.5 km
77. Error = ± 0.005 L
78. Error = ± 0.05 T
79. Error = ± 0.005 m
80. 15 m ≤ x < 17 m
81. 18.2 m ≤ x < 18.4 m
82. 9.875 kg ≤ x < 9.985 kg
83. 542 km ≤ x < 544 km
84. 71 min ≤ x < 73 min
85. 9.50 L ≤ x < 9.52 L
86. 11.625 m² ≤ x < 16.625 m²
87. 4.8825 km² ≤ x < 5.3625 km²
88. 55.875 m² ≤ x < 64.175 m²

Page 12

89. 2 sf
90. 3 sf
91. 1 sf
92. 4 sf
93. 2 sf
94. 3 sf
95. 3 sf
96. 4 sf
97. 5 sf

Page 14

98. a) 28 pages/h
b) 17 hours
99. a) 15 m²/L
b) 67 mL/m² (2 sf)
100. a) \$2.15/L
b) 32 L
c) \$64.50

Page 14 cont...

101. a) 7.72 g
b) \$299.54
102. a) 0.75 g/cm^3
b) 6000 cm^3
103. a) 55.4 km (1 dp)
b) 3.8 hours
c) 26.4 m/s
104. a) 1.6 kg/45 m^2
 $= 35.6 \text{ g/m}^2$
so over applied.
b) 0.3 T/ha
105. a) 11.25 kg
b) 0.00025 kg/L
106. 667 m/min , 11.1 m/s

Page 16

107. 60.0 cm (1 dp)
108. 419.3 m (1 dp)
109. 105.5 m (1 dp)
110. 60 mm (0 dp)
111. 96 mm (0 dp)
112. 94 mm (0 dp)
113. 42.8 cm (1 dp)
114. 39.0 cm (1 dp)
115. 141 mm (0 dp)

Page 17

116. Note steps in the explanation.
Length = $21x + 2 \times 2\pi x$
Steel = $\frac{350}{4.35} \text{ m}$
 $= 80.46 \text{ m}$
 $80.46 \text{ m} = 21x + 4\pi x$
 $x = 2.40 \text{ m}$ (2 dp)
117. Rectangle 1
2 strgts = 200 m
curves = 200 m
 $\pi d_1 = 200$
 $d_1 = 63.66 \text{ m}$
 $\text{Rect}_1 = 100 \times 63.66$
 $= 6370 \text{ m}^2$ (3 sf)
- Rectangle 2
2 strgts = 240 m
curves = 160 m
 $\pi d_2 = 160$
 $d_2 = 50.93 \text{ m}$
 $\text{Rect}_2 = 120 \times 50.93$
 $= 6110 \text{ m}^2$ (3 sf)

Page 17 Q117 cont...

Smallest rectangle has
120 m straights and diameter
of semicircle of 50.9 m (1 dp).

Page 20

118. $192.5 = 190 \text{ cm}^2$ (2 sf)
119. $103.8 = 104 \text{ cm}^2$ (3 sf)
120. $245.5 = 246 \text{ m}^2$ (3 sf)
121. $24\ 340 = 24\ 000 \text{ mm}^2$ (2 sf)
122. $110.67 = 110 \text{ cm}^2$ (2 sf)
123. $118.6 = 120 \text{ cm}^2$ (2 sf)

Page 21

124. $9434.6 = 9430 \text{ mm}^2$ (3 sf)
125. $4698 = 4700 \text{ mm}^2$ (2 sf)
126. Area land = 239.08
 $= 239 \text{ m}^2$ (3 sf)
9 x 1 kg bags and 1 x 500 g bags
Cost = \$86.50
127. Area court. = 408.37 m^2
No. of moulds = 10 890
Total cost = \$9000 (2 sf)
Or cost = \$9100
rounding up

Page 24

128. Volume = 624 m^3
Required air = $3120 \text{ m}^3/\text{hour}$
Required air = $52 \text{ m}^3/\text{minutes}$
129. Volume = 2386.2 cm^3
Working in cm only.
mice = 7 (or 8)
130. Volume = 37212.8 cm^3
Volume = 37200 cm^3 (3 sf)
Capacity = 37.2 litres

Page 25

131. Volume = 5481.6 mm^3
Volume = 5.48 cm^3 (3 sf)
Density = 0.58 g/cm^3 (2 sf)
132. Assume the truck is filled to
approx. flat so cuboid.
Vol. truck = 5.939 m^3
No. trips = 20.4
Round up trips to 21.
Time = $21 \times (11.75 + 42 + 6.5)$
Time = 21 hours

Page 25 cont...

133. Length = $\pi \times 16$
 $= 5.026 \text{ cm}$
Vol. of gold = $5.026 \times 0.5\pi \times 0.4^2$
Vol. of gold = 1.3 cm^3 (2 sf)
Must be in cm throughout.
Cost = \$1500 (2 sf)

Page 26

134. The best model is a cone as
the pile will be approximately
circular in base and have
approximately straight lines
from the base to the vertex.
The model may under estimate
the volume if deviations from
the cone are ignored.

$$\text{Vol. cone} = \frac{1}{3}\pi(2h)^2h$$

$$2.4 = \frac{4}{3}\pi h^3$$

$$h = 0.83 \text{ m}$$

135. As the trench is half as deep as
it is wide and has curved sides
the best model is likely to be
half a cylinder.

$$\text{Vol. trench} = \frac{1}{2}\pi(1.6)^2 \times 245$$

$$= 985.2 \text{ m}^3$$

Page 27

136. a) Prism as the two ends are
joined by straight sides.
Vol = 4.752 m^3
Vol = 4.8 m^3 (2 sf)
- b) Pyramid as all lines from
the base go to one point.
Vol = 4.7917 m^3
Vol = 4.8 m^3 (2 sf)
- c) Cuboid.
Vol = 4.76 m^3
Vol = 4.8 m^3 (2 sf)
- d) Half a cylinder.
Vol = 4.75 m^3
Vol = 4.8 m^3 (2 sf)
- e) The same to 2 significant
figures.
- f) If you are shorter
than 1.7 m then tent c)
otherwise tent b) as you
can stand up in the centre.

Page 30

137. $6.2557 = 6.3 \text{ m}^2$ (2 sf)
 138. $1060.98 = 1060 \text{ cm}^2$ (3 sf)
 139. $1420.32 = 1420 \text{ cm}^2$ (3 sf)
 140. $1380.05 = 1380 \text{ cm}^2$ (3 sf)

Page 31

141. 3 drops per roll of wallpaper
 Length (18 drops) = 6 rolls
 width (9 drops) = 3 rolls
 Total rolls = 18
 Cost = \$629.10
 142. Area to paint = 942.8 m^2
 Litres (2 coats) = 104.8 L
 Tins of paint = 105
 Cost = \$1443.75
 Discount = \$216.56
 Total Cost = \$1227.19

Page 32

143. Area of sphere = $53\,093 \text{ cm}^2$
 Volume of gold = 185.8 cm^3
 Mass of gold = 3587 g
 Cost of gold = \$214 144
 = \$214 000
 (3 sf)
 144. Best model is a trapezium
 minus 3 triangles.
 Area of W = $202\,500 \text{ cm}^2$
 Volume of metal = $81\,000 \text{ cm}^3$
 Mass of metal = 684 kg (3 sf)

Page 34

145. a) $18.87 = 19 \text{ L}$ (2 sf)
 b) $18.869 = 19 \text{ L}$ (2 sf)
 146. $12.2145 = 12 \text{ L}$ (2 sf)
 147. $2389 \div 10 = 239 \text{ mL}$ / cup
 = 240 mL (2 sf)

Page 35

148. Vol. = $3 \times 3 \times 8.1 \text{ inches}^3$
 Vol. = $7.62 \times 7.62 \times 20.57 \text{ cm}^3$
 Vol. = 1190 cm^3
 Capacity = 1.2 litres (2 sf)

Page 35 cont...

149. Vol. of pool = 488.4 m^3
 (Note: 554.4 means you have completely filled the pool)
 No. of litres = 488 400 L
 Time (mins) = 20 350 mins.
 Time (hours) = 339 h (0 dp)
 Total = 14 days 3 hours
 150. Volume = $\pi r^2 h$
 diameter = $2r$
 height = $4r$
 Volume = $\pi r^2 4r$
 $4\pi r^3 = 340 \text{ cm}^3$
 $r = 3 \text{ cm}$
 diameter = 6 cm
 Height = 12 cm

Page 36

151. a) Volume of tank = 11.08 m^3
 Capacity (2 sf) = 11 000 L
 b) Consumption 5 d = 2709 L
 Consum/per./d = 135 L
 c) Consumption $\times 7 = 945 \text{ L/d}$
 Water remaining = 8374 L
 Days left = 8.86
 = 9 days
 (1 sf)
 d) Every 1000 L means mark
 stick with 11 divisions
 Each division = 0.162 m
 Round to 2 sf = 16 cm
 152. a) Cap. 0.5 cylind. = 242 L
 Capacity cuboid = 129 L
 Total capacity = 371 L
 b) Displaced = 74 L
 c) Drop in level = 75 mm
 New depth = 365 mm

Page 38

153. Load = 12.2 kg (1 dp)
 154. Load total = 170 kg
 Wine casks = 56.7 (1 dp)
 Limit = 56 wine casks
 155. Vol. petrol = 8.65 m^3
 Mass petrol = 8.65 T
 Total mass = 11.1 T (1 dp)
 156. 90% capacity = 52.4 L
 Bottles = 1539
 157. Mass water = 2552 kg
 Total = 2840 kg (3 sf)
 158. $6d^3 = 380 \text{ cm}^3$
 Depth = 40 mm

Page 39

159. a) Vol. bar = $0.001\,629 \text{ m}^3$
 Vol. 2 disks = $0.005\,529 \text{ m}^3$
 Total vol. = $0.007\,158 \text{ m}^3$
 b) Total mass = 56 kg (0 dp)
 160 a) Vol. bar = $0.001\,362 \text{ m}^3$
 Vol. balls = $0.017\,569 \text{ m}^3$
 Total vol. = 0.0189 m^3 (3 sf)
 b) Total mass = 149 kg

Page 40

161. Circle area = 2.01 m^2
 a) Volume = 1.6 m^3
 b) Volume = 74.6 m^3
 c) Capacity = 74 600 litres

Page 41

162. a) Area = 14 850 m^2
 Concrete = 223 m^3 (3 sf)
 Sand = 371 m^3 (3 sf)
 b) Water = 1260 m^3 (3 sf)
 Pump = 158 000 L/h
 c) $d \times 14\,850 = 250 \text{ m}^3$
 Rain (d) = 17 mm/h
 163. a) Area = 4.2 m^2 (2 sf)
 Volume = 0.42 m^3 (2 sf)
 Volume = 420 L (2 sf)
 Bags = 11 (0 dp)
 b) Manure = 21 kg (2 sf)
 c) Time = 10 min. (0 dp)

Page 43

164. 0726 hours
 165. 1713 hours
 166. 1157 hours
 167. 2142 hours
 168. 0015 hours
 169. 1230 hours
 170. 1518 hours
 171. 1305 hours
 172. 1:56 pm
 173. 3:20 am
 174. 12:15 am
 175. 5:54 pm
 176. 11:46 pm
 177. 8:28 am
 178. 12:00 midnight
 179. 10:25 am
 180. 13 hours 54 minutes
 181. 21 hours 39 minutes
 182. 23 hours 19 minutes
 183. 22 hours 46 minutes

Page 44

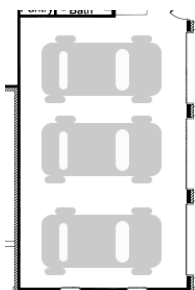
184. 9 hours 30 minutes
 185. 8 hours 05 minutes
 186. 41 hours 15 minutes
 187. 14 hours 35 minutes
 188. 45 hours
 189. 8 hours
 190. 175 nights
 191. 4765 nights
 192. 28 kitsets/h
 193. 24 km/h
 194. $42.2/2.6375 = 16 \text{ km/h}$
 195. Approx. 552 000 000 beats
 196. 67.6 people/s
 197. 51.15 km/h

Page 46

198. 8:30 pm
 199. 0600 hours the next day
 200. 4:45 am same day
 201. 0515 hours the next day
 202. 1300 hours Saturday
 203. 0500 hours Wed.
 204. 0025 hours Tuesday
 205. 1025 hours Tuesday
 206. 10:15 pm previous day
 207. 11 hours 40 minutes
 208. 13 hours 45 minutes
 209. 9:10 am Saturday
 210. a) Flying – Time zone = 1.5
 Flying + Time zone = 5.5
 Flying time = 3.5 hours
 b) Flying time – 2 = 1.5
 Flying time = 3.5 hours

Page 48

211. a)



- b) Area = 11.6×3
 = 34.8 m^2
 Order $\geq 35 \text{ m}^2$

Page 48 Q211 cont...

- c) Area all = 10.6×6.2
 = 65.72 m^2
 Area porch is approx. 9.6 m^2
 Total area = 56 to 58 m^2
 With wastage added
 Budget = \$1850 to
 \$1920 (3 sf)
 d) Lots of models. There
 should be a minimum
 of 6 calculations with
 explanation leading to:
 Total area is approximately
 300 m^2 (2 sf).

Page 49

212.

- a) 12 sided so model the coin
 with 12 triangles with the
 base the length of one of
 the 12 sides and the height
 half the distance across the
 coin.
 b) Area = $12 \times \frac{1}{2} \text{ base} \times \text{h}$
 = $12 \times \frac{1}{2} \times 8 \times 14$
 = 672 mm^2
 = 670 mm^2 (2 sf)
 c) Vol. = 672×2.2
 = 1478.4 mm^3
 = 1.4784 cm^3
 Mass = 12.49 g
 = 12 to 13 g
 213. a) Vol \$1 = $\pi \times 11^2 \times 2.1$
 = 798.3 mm^3
 = 800 mm^3 (2 sf)
 Vol \$2 = $\pi \times 13^2 \times 3.0$
 = 1592.8 mm^3
 = 1600 mm^3 (2 sf)

Twice the volume so twice
 the mass.

- b) Accurately weigh \$10 of
 coins and divide your
 answer by 10. Then each
 night, divide the total
 mass of \$1 and \$2 coins
 by the weight of a \$1
 coin. This will give you
 an estimate of the total
 amount.

Page 50

214. a) Dia. = $42 \text{ mm} \pm 1 \text{ mm}$
 Rad. = $21.0 \text{ mm} \pm 0.5 \text{ mm}$
 You will need to put the
 ball against a wall and use
 an object such as a book
 to mark the width (and
 diameter) of the ball.
 b) Area = 5542 mm^2
 215. a) diameter = 62 mm
 circumference = 195 mm
 height = 127 mm
 b) Area = $24\,800 \pm 600 \text{ mm}^2$

Page 51

216. a) width = 21.0 cm
 height = 29.7 cm
 b) $\pi d = 29.7$
 $d = 9.45 \text{ cm}$
 c) Vol. = 1473 cm^3
 Capacity = 1473 ml
 217. a) Radius = 1.25 m
 b) Area = 4.91 m^2
 Vol = 0.0174 m^3
 Number = 29
 c) Area $\times D = \frac{.5}{50}$
 $D = 2.0 \text{ mm}$

Page 52

218. Width = 90 m
 Straight = 100 m
 A = $15\,362 \text{ m}^2$
 Time = 4 389 minutes
 Time = 73.15 h
 Time = 8 days 1 hour
 Start 3 pm 4th Nov.
 219. 0.5 sphere = 4091 mm^3
 cylinder = 4172 mm^3
 Vol. = 8.26 cm^3
 Chem = $2 \times 20 \text{ litres}$
 Chem = $40\,000 \text{ cm}^3$
 Number = 4840
 rounding down.

Pages 53 – 55

Practice Assessment Task 1

Measurement

Achievement

Apply measurement will involve using a range of methods solving problems, demonstrating knowledge of measurement concepts and terms, and communicating solutions which would usually require only **one or two** steps.

For example, a student could calculate the distance of the two straights, the distance around the track, the area of the grounds or the volume of water per hour

- the length of the two straights.
Front straight = $79 \times 4 = 316$ m
Back straight = $70 \times 4 = 280$ m
Total straights = $0.6 \text{ km} \pm 2\%$
- the length of the running track.
The model the author used was a length of string held out by drawing pins. Answer ± 100 m.
Length of track = $403 \times 4 = 1600$ m (2 sf)
- the area. In the authors' case two semicircles and a trapezium was used. Answer ± 1 ha.
Area 1 semi = $78\,800 \text{ m}^2$ (3 sf)
Area 2 semi = $48\,600 \text{ m}^2$ (3 sf)
Area trap. = $101\,700 \text{ m}^2$ (4 sf)
Total area = $229\,000 \text{ m}^2$ (3 sf)
Total area = 22.9 ha (3 sf)
- the volume of water required.
Volume $\text{H}_2\text{O} = \text{Area} \times 0.025 = 5730 \text{ m}^3$ (3 sf)
- the volume of water per hour.
Volume $\text{H}_2\text{O} = \text{Area} \times 10 \times 3600 = 410 \text{ m}^3$ (2 sf)
- the total time to water.
Time taken = $5730 \div 410 = 14 \text{ h}$ (2 sf) $\pm 5\%$

Care must be taken to accept some measurement error (± 1 mm) and different results from different approaches (particularly area) but these should be within 5%.

Units must be as specified or if not specified appropriate. Correct calculations for at least **two** of these methods could be expected.

Appropriate units, for example, area is m, km, m^2 or m^3 must be supplied in at least **two** calculations and a clear identification as to what is being calculated.

Merit

In addition to Achievement a Merit answer will involve relational thinking. This will involve one or more of:

- selecting and carrying out a logical sequence of steps
- connecting different concepts and representations
- demonstrating understanding of concepts
- forming and using a model, and relating findings to a context, or communicating thinking using appropriate mathematical statements.

For example, a student could

- calculate the area of the grounds to 1 significant figure.
 - use their figure for the area (correct or wrong) to correctly calculate the hours of water required.
 - correctly calculate how many cubic metres per hour the bore can produce.
- Only one example of relational thinking is required for Merit.

Excellence

In addition to Merit an Excellence answer will involve extended abstract thinking. Extended abstract thinking must involve one or more of:

- devising a strategy to investigate or solve a problem
- demonstrating understanding of abstract concepts
- developing a chain of logical reasoning, or proof
- forming a generalisation, and using correct mathematical statements, or communicating mathematical insight.

For example, a student may correctly (minor error accepted)

calculate the hours of watering or develop a more sophisticated model for calculating the area and correctly using this model.

Evidence of insight could be:

Discussing with relevant points problems with the models they used or referring to the 15 hour maxim for watering and if in dry weather more than 25 mm of water was required per week then this figure would be exceeded.

Communicating solutions

At all levels there is a requirement relating to the communication of the solutions.

At Achieved, the result of a numerical calculation only is insufficient, working is expected and students need to indicate what the calculated answer represents.

At Merit, students need to clearly indicate what they are calculating and their solutions need to be linked to the context.

At Excellence, the response needs to be clearly communicated with correct mathematical statements and students need to explain any decisions they make in the solution of the problem.

Pages 56 – 58

Practice Assessment Task 2

Measurement

Achievement

Apply measurement will involve using a range of methods solving problems, demonstrating knowledge of measurement concepts and terms, and communicating solutions which would usually require only **one or two** steps.

For example, a student could calculate the volume of plaster of paris, the quantity of water needed or the volume of each of the moulds.

- the volume of plaster of paris.

$$\begin{aligned}\text{Vol. cone} &= \frac{1}{3}\pi(7.7)^2 \times 7.8 \\ &= 480 \text{ cm}^3\end{aligned}$$

- the quantity of water required for mixing with the plaster of paris.

$$\begin{aligned}\text{Ratio 2:1} &= 240 \text{ cm}^3 \\ &= 240 \text{ ml (2 sf)}\end{aligned}$$

- the volume after mixing.

$$\text{Total mix} = 576 \text{ cm}^3$$

- the volume of each of the moulds.

$$\text{Sphere} = 5.6 \text{ cm}^3 \text{ (2 sf)}$$

$$\text{6-sided} = 4.1 \text{ cm}^3 \text{ (2 sf)}$$

$$\text{4-sided} = 1.8 \text{ cm}^3 \text{ (2 sf)}$$

$$\text{8-sided} = 3.7 \text{ cm}^3 \text{ (3 sf)}$$

Care must be taken to accept some measurement error ($\pm 5\%$) and different results from different approaches.

Units must be as specified, or if not specified, appropriate. Correct calculations for at least **two** of these methods could be expected in addition to the calculation of the cube.

Appropriate units, for example, area is mm, cm, cm^3 or mm^3 must be supplied in at least **two** different calculations and a clear identification as to what is being calculated.

Merit

In addition to Achievement a Merit answer will involve relational thinking. This will involve one or more of:

- selecting and carrying out a logical sequence of steps
- connecting different concepts and representations
- demonstrating understanding of concepts
- forming and using a model, and relating findings to a context, or communicating thinking using appropriate mathematical statements.

For example, a student could

- calculate the volume of all four moulds.
- use their figure for the volume of the moulds to calculate correctly that there is insufficient mix for 50 of each mould.

$$50 \text{ of all four} = 760 \text{ cm}^3$$

- correctly calculate which three moulds can be made with the mix available.

$$50 \text{ of 4-sided} + 8\text{-sided} + 6\text{-sided} = 480 \text{ cm}^3 \text{ (2 sf)}$$

$$50 \text{ of 4-sided} + 8\text{-sided} + \text{sphere} = 560 \text{ cm}^3 \text{ (2 sf)}$$

Only one example of relational thinking is required for Merit.

Excellence

In addition to Merit an Excellence answer will involve extended abstract thinking. Extended abstract thinking must involve one or more of:

- devising a strategy to investigate or solve a problem
- demonstrating understanding of abstract concepts
- developing a chain of logical reasoning, or proof
- forming a generalisation, and using correct mathematical statements, or communicating mathematical insight.

For example, a student may correctly answer the water required problem (minor error accepted).

Evidence of insight could be:

Discussing that the measurement errors, wastage making moulds or plaster drying too quickly could make the answer less certain and the best answer could be 50 of the 4-sided + 8-sided + 6-sided moulds.

Does not need to be these points but must show the student is relating the problem to reality.

Communicating solutions

At all levels there is a requirement relating to the communication of the solutions.

At Achieved, the result of a numerical calculation only is insufficient, working is expected and students need to indicate what the calculated answer represents.

At Merit, students need to clearly indicate what they are calculating and their solutions need to be linked to the context.

At Excellence, the response needs

to be clearly communicated with correct mathematical statements and students need to explain any decisions they make in the solution of the problem.