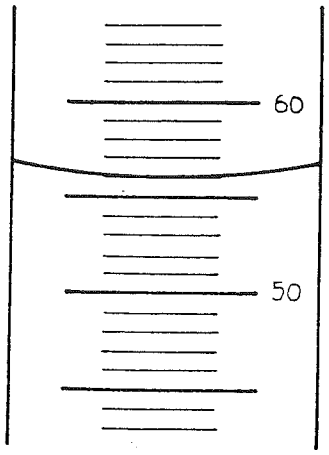
MEASURING LIQUID VOLUME

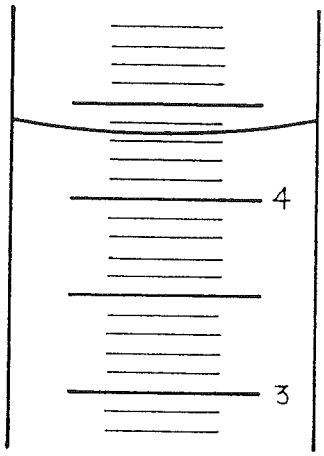
18

Name _____

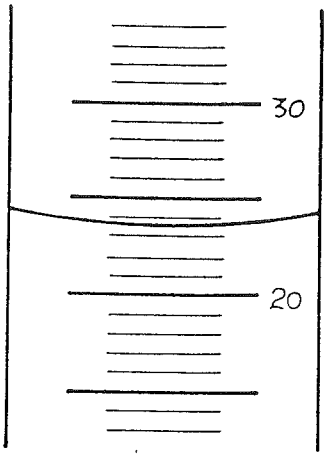
What volume is indicated on each of the graduated cylinders below? The unit of volume is mL.



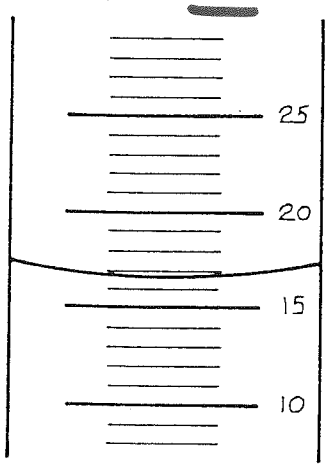
a) 56.0



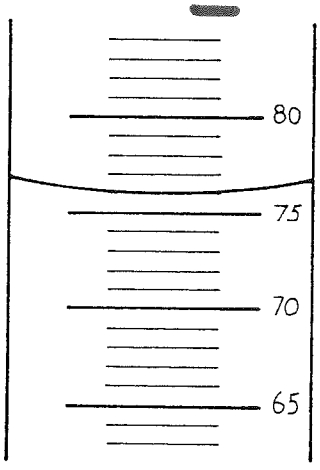
b) 4.34



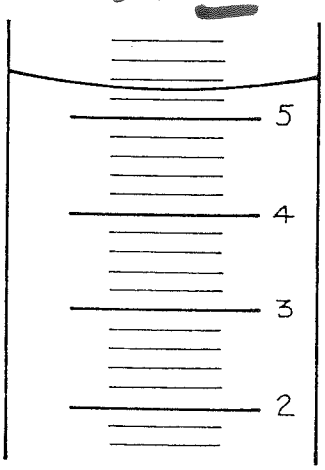
c) 23.6



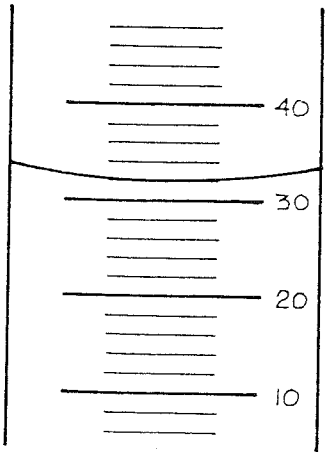
d) 16.7



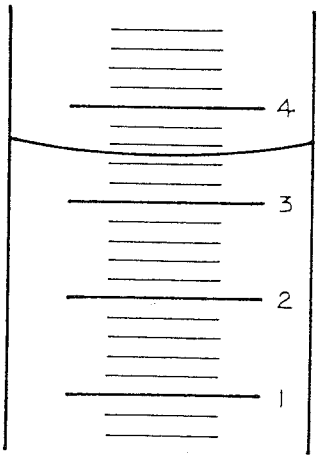
e) 76.0



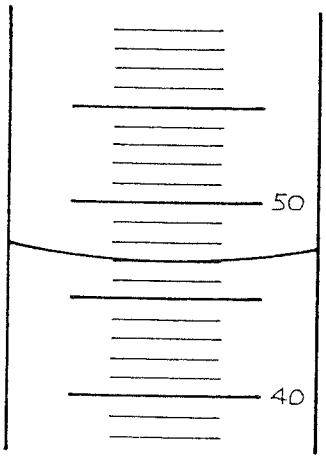
f) 5.3



g) 32.0



h) 3.5

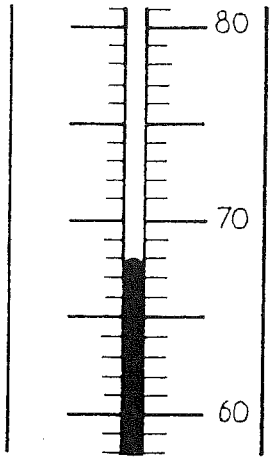


i) 47.0

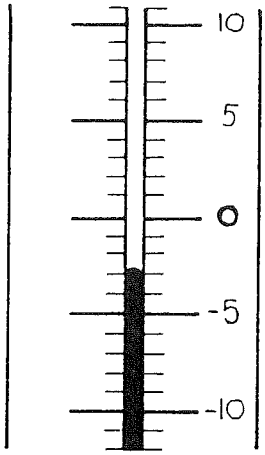
READING THERMOMETERS

Name _____

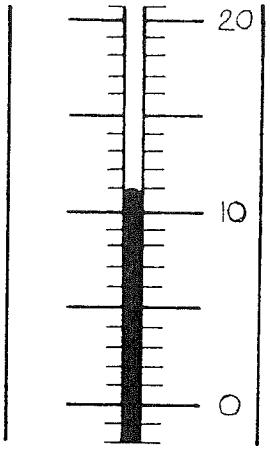
What temperature is indicated on each of the thermometers below?



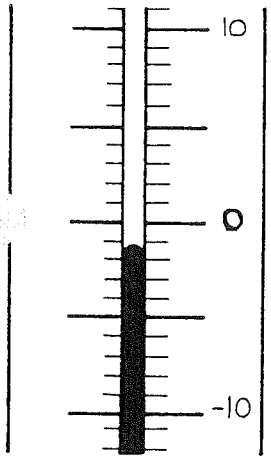
a) 68.0



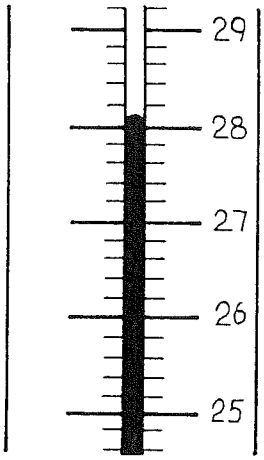
b) -2.7



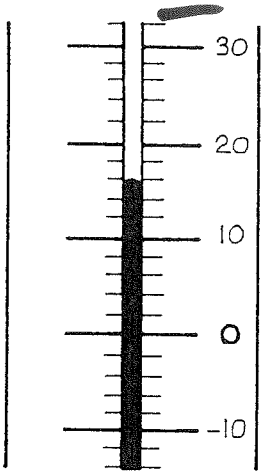
c) 11.0



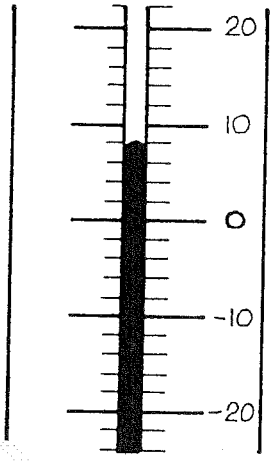
d) -1.1



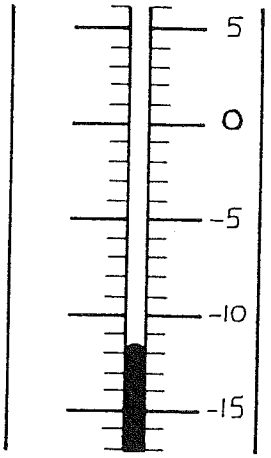
e) 28.1



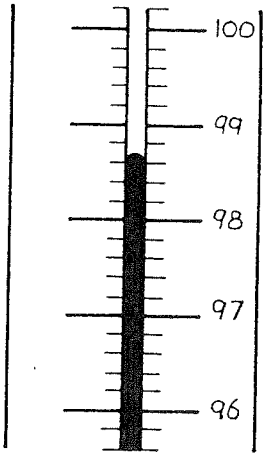
f) 16.0



g) 8.0



h) -11.5



i) 98.7

Sci Notation

1) $0.005 = 5 \times 10^{-3}$

2) $5,050 = 5.05 \times 10^{3}$

3) $0.0008 = 8 \times 10^{-4}$

4) $1,000 = 1 \times 10^{3}$

5) $1,000,000 = 1 \times 10^{6}$

6) $0.25 = 2.5 \times 10^{-1}$

7) $0.025 = 2.5 \times 10^{-2}$

8) $0.0025 = 2.5 \times 10^{-3}$

9) $500 = 5 \times 10^{2}$

10) $5,000 = 5 \times 10^{3}$

1) $1.5 \times 10^{3} = 1500$

2) $1.5 \times 10^{-3} = 0.0015$

3) $3.75 \times 10^{-2} = 0.0375$

4) $3.75 \times 10^{2} = 375$

5) $2.2 \times 10^{5} = 220,000$

6) $3.35 \times 10^{-1} = 0.335$

7) $1.2 \times 10^{-4} = 0.00012$

8) $1 \times 10^{4} = 10,000$

9) $1 \times 10^{-1} = 0.1$

10) $4 \times 10^{0} = 4$

Sig figs

1) 0.02 = 1
   ↓ ↓
   pH Ø

2) 0.020 = 2
   ↓ ↓ ↓
   pH Ø Tr

3) 501 = 3
   ↓ ↓ ↓
   Ø TP Ø

4) 501.0 = 4
   ↓ ↓ ↓ ↓
   Ø TP Ø Tr

5) 5,000 = 1
   ↓ (underline 000)
   Ø pH

6) 5000. = 4
   ↓ (underline 5000)
   Ø TP

7) 6,051.00 = 6
   ↓ ↓ ↓ ↓ ↓
   Ø TP Ø Ø TrTr

8) 0.0005 = 1
   (underline 0005)
   pH ↓
   Ø

9) 0.1020 = 4
   ↓ ↓ ↓ ↓
   Ø TP Ø Tr

10) 10,001 = 5
    ↓ (underline 10,001) ↓
    Ø TP Ø

1) $80\bar{4}0$
   ↓
   pH

2) $0.0300\bar{0}$
   ↓
   Tr

3) $699.\bar{5}$

4) $2.000\bar{0} \times 10^2$
   ↓
   Tr

5) $0.90100\bar{0}$
   ↓
   Tr

6) $90,\bar{1}00$

7) $4.\bar{7} \times 10^{-8}$

8) $10,800,000\bar{.}$
   ↓
   TP

9) $3.0\bar{1} \times 10^{21}$

10) $0.000410\bar{0}$
    ↓
    Tr

math w/ Sig figs.

1) $1.35\ m \times 2.467\ m = 3.33045$ → $3.33\ m^2$
(3) (4) (3)

2) $\frac{1,035\ m^2}{42\ m} = 24.64$ → $25\ m$
(4) (2) (2)

3) $12.01\ mL + 35.2\ mL + 6\ mL = 53.21$ → $53\ mL$
no decimals

4) $55.46\ g - 28.9\ g = 26.56$ → $26.6\ g$
1 decimal

5) $0.021\ cm \times 3.2\ cm \times 100.1\ cm = 6.72672$ → $6.7\ cm^3$
(2) (2) (4) (2)

6) $0.15\ cm + 1.15\ cm + 2.051\ cm = 3.351$ → $3.35\ cm$
2 decimals

7) $\frac{150\ L^3}{4\ L} = 37.5 =$ → $40\ L^2$
(2) (1) (1)

8) $505\ kg - 450.25\ kg = 54.75$ → $55\ kg$
no decimals

9) $1.252\ mm \times 0.115\ mm \times 0.012\ mm = .0017\,2776$ → $.0017\ mm^3$
(4) (3) (2) (2)

10) $\frac{1.278 \times 10^3\ m^2}{1.4267\ m} = 8.957\,734632$ → $8.958\ m$
(4) (5) (4)

Do the following calculations and give your answer in the correct number of sig figs.

① $5.47 + 4.94 = 10.41$ — 2 decimal places

② $100.1 + 2.004 = 102.104$ — 1 decimal place → 102.1

③ $57.98 - 7.000 = 50.98$ — 2 decimal places

④ $1.0000\ g - 0.4444\ g = .5556\ g$ — 4 decimal places

⑤ $67 \times 445 = 29815$ → 3.0×10^4
(2) (3) (2)

⑥ $0.0014 \times 0.00014 = 1.96 \times 10^{-7}$ → 2.0×10^{-7}
(2) (2)

⑦ $(7.0 \times 10^{24})(6.02 \times 10^{23}) = 4.214 \times 10^{48}$ → 4.2×10^{48}
(2) (3) (2)

⑧ $\frac{98}{12} = 8.1666$ → 8.2
(2) (2) (2)

⑨ $\frac{2001\ m}{688\ m} = 2.908143$ → 2.91
(4) (3) (3)

⑩ $\frac{9.915 \times 10^{-7}}{1.77 \times 10^{-34}} = 5.601969 \times 10^{27}$ → 5.60×10^{27}
(4) (3) (3)

⑪ $\frac{(19.4)(1.0)(5090)}{(171)(813)} = .710285$ → .71
(3) (2) (4) (3) (3) (2)

⑫ $\frac{(6.8 \times 10^{7})(6.022 \times 10^{23})}{(3.00 \times 10^{8})(1.22 \times 10^{-25})} = 1.1188 \times 10^{48}$ → 1.1×10^{48}
(2) (4) (3) (3) (2)