Answer Key

Pythag. Practice #4

1) a) 60m
   b) 123 ft.
   c) ≈ 27.5m
   d) 3cm
2) ≈ 4.3589
3) a) ≈ 5.66 or $5\frac{3}{5}$ in.
   b) ≈ 7.78 or $7\frac{7}{10}$ in.
4) 5 in.
5) $\sqrt{3^2+2^2+2^2+2^2+2^2}$
6) ≈ 2.83 ft.
7) ≈ 14.1m

Pythag. Practice #5

1) a) ≈ 8.60 in.
   b) 78m
   c) 48 ft.
   d) 365m
   e) ≈ 30.2 ft.
   f) 11.2m
   g) 21cm
2) a) obtuse
   b) acute
   c) right
3) 4970
4) ≈ 10.7 in.
5) ≈ 16.97

Mensuration Prac. #1

1) a) A = C = E = 105°
      B = D = 75°
   b) 39°
   c) 68°
2) 360°
3) a) Both are 40 ft^2.
   b) All are 0.7 m^2
4) a) ≈ 110m
   b) ≈ 9.42 or $9\frac{3}{7}$ m
   c) ≈ 14m
   d) ≈ 6.36 or $6\frac{4}{11}$ m
5) a) 450 cm^2
   b) 10 ft^2 or 1440 in^2
   c) 15 m^2
   d) 40 in^2
   e) ≈ 43.3 cm^2

Mensuration Gp #1

1) a) Pieces get thinner;
      Sides get vertical;
      Top gets smoother.
   b) A rectangle
   c) ≈12.56 or $12\frac{4}{7}$ in^2
   d) $A = \pi \cdot r^2$
2) a) 500 ft^2
   b) 500 ft^3
   c) 1000 ft^3
   d) 4000 ft^3
3) a) 3 m^2
   b) 15 m^3
4) One possibility:
   $V = A_{Base} \cdot H$
5) 160 ft^3
6) $9\pi \approx 28\frac{2}{7}$
   or 28.3 cm^2
7) The volume remains the same.

Mensuration Prac. #2

1) a) $49\pi \approx 154$ in^2
   b) $16\pi \approx 50.24$
      or $50\frac{2}{7}$ cm^2
2) a) 28 in^2
   b) 330 cm^2
   c) triangle = 9.6m^2
      parallelogram=19.2m^2
   d) $\frac{3}{16}$ in^2
   e) 54 m^2
   f) 28 m^2
   g) 120 m^2
   h) ≈ 62.4 cm^2
3) a) 960 in^3
   b) 1 in^3
   c) 300 in^3

Note: From here on, only decimal approximations for π (e.g., 3.14) are used for calculating all answers. Answers that are calculated by using $^{22}/_{7}$ for π are equally valid, but are not listed in the answer key.

Mensuration Gp #2

1) a) 2,000,000 ft^3
   b) $256\pi \approx 804$ cm^3
2) a) V = 120 cm^3
      S = 204 cm^2
   b) V ≈ 118 ft^3
      S ≈ 133.5 ft^2
3) a) 144
   b) 1728
4) a) 3:2:1
   b) $972\pi \approx 3052$ cm^3

Mensuration Prac. #3

1) For calculating the volume of solids where the top and bottom are equal and parallel.
2) For calculating the volume of solids where the top comes to a point.
3) a) 9
   b) 27
   c) 10,000
   d) 1,000,000
4) a) $\frac{3}{16}$ in^2
   b) 216 m^2
   c) $100\pi \approx 314$ m^2
   d) 108 ft^2
   e) ≈ 3.90 m^2
5) a) 4 ft^3 or 6912 in^3
   b) $27\pi \approx 84.8$ cm^3
   c) $\frac{64\pi}{3} \approx 67.0$ m^3
   d) ≈ 41.6 in^3
   e) ≈ 31,750 or 31,800 m^3

Mensuration Prac. #4

1) a) $\frac{81\pi}{4} \approx 63.6$ m^2
   b) ≈ 177 cm^2
   c) ≈ 1.73 in^2
2) a) $\frac{25\pi}{6} \approx 13.1$ m
   b) $\frac{125\pi}{6} \approx 65.4$ m^2
3) a) $\frac{1600\pi}{3} \approx 1675$ in^3
   b) ≈ 96.2 in^3
   c) 3680 cm^3
   d) $2268\pi \approx 7125$ in^3
4) a) V = 72 m^3
      S = 108 m^2
   b) $V = 1600\pi$
      ≈ 5024 in^3
      $S = 520\pi$
      ≈ 1633 in^2
   c) V ≈ 2910 cm^3
      S = 1360 cm^2

Mensuration Gp #3

1) a) $288\pi \approx 905$ in^3
   b) $144\pi \approx 452$ in^2
2) a) ≈ 2.90 m^2
   b) 234 cm^2
3) a) 900 m^2
   b) ≈ 693 m^2
   c) ≈ 1038 or 1039m^2
   d) between 1143 and 1146 m^2
   e) The circle

Mensuration Prac. #5

1) a) $\frac{25\pi}{6} \approx 13.1$ cm
   b) $\frac{125\pi}{12} \approx 32.7$ cm^2
2) a) 54 m^2
   b) 48 m^2
3) a) ≈ 47.3 m^2
   b) ≈ 43.3 cm^2
4) a) V = 5400 ft^3
      S = 1980 ft^2
   b) $V = 54\pi \approx 170$ in^3
      $S = 54\pi \approx 170$ in^2
   c) $V = \frac{256000000000\pi}{3}$
      ≈268 billion mi^3
      $S = 64{,}000{,}000\pi$
      ≈201 million mi^2

Answer Key

5) a) $\approx 511\ cm^3$
   b) $1408\pi \approx 4421\ ft^3$
   c) $\approx 236\ cm^3$
   d) $\approx 118\ cm^3$

Mensuration Prac. #6

1) a) $216\ in^3$
   0.125 or $1/8\ ft^3$
   b) $216\ in^2$; $1.5\ ft^2$
2) a) $4\pi \approx 12.56\ in$
   b) $12\pi \approx 37.68\ in^2$
3) a) $V = 2000\pi$
   $\approx 6280\ in^3$
   $S = 600\pi$
   $\approx 1884\ in^2$
   b) $V = \frac{4000\pi}{3}$
   $\approx 4187\ in^3$
   $S = 400\pi$
   $\approx 1256\ in^2$
   c) $V = 48\ ft^3$
   $S = 96\ ft^2$
4) a) $2940\pi \approx 9232\ ft^3$
   b) $\frac{550\pi}{3} \approx 576\ in^3$
5) a) $5280\ ft^3$
   b) 5280
   c) 1 mile
6) a) $1974\ m^2$
   b) $\approx 14.7\ ft^2$
7) $1/8$