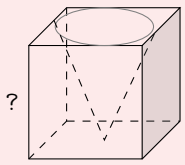
§1 Sunday, 07/26/20 Lesson Printable

§1.1 Double and Half Trick Problems

1. $1.5 \times 5.2 =$ _____
2. $4.8 \times 15 =$ _____
3. $64 \times 1.5 =$ _____
4. $15 \times 48 =$ _____
5. $14 \times 203 =$ _____
6. $14 \times 312 =$ _____
7. $\mathbf{24} \times \mathbf{35} =$ _____
8. $312 \times 14 =$ _____
9. A rectangle has a length of 2.4 and a width of 1.5. Its area is _____
10. $18 \times 112 =$ _____
11. $27 \times 14 =$ _____
12. $\mathbf{21} \times \mathbf{15} \times \mathbf{14} =$ _____
13. $33.75 = 1.5 \times$ _____
14. $345 \times 12 =$ _____
15. $\mathbf{1.2} \times \mathbf{1.25} =$ _____
16. 24% of 44 = _____
17. $14 \times 25 + 12.5 \times 28 =$ _____

§1.2 Calculator Geometry Problems

Problem 1. A cone is taken out of a cube. The remaining volume is 100. What is the side length of the cube?



Problem 2. Find the area of a regular pentagon with side length 3.

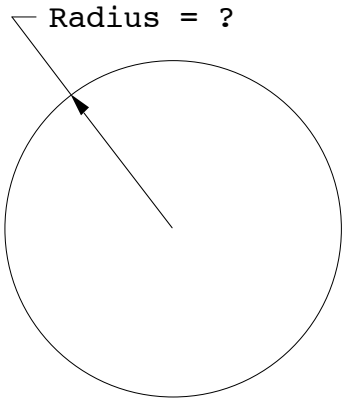
Problem 3. Find the area of a regular hexagon with side length 3.

Problem 4. Find the area of a octagon with side length 3.

I have included some extra problems on the next page. **Please skip the problem in the bottom row and middle column and the problem in the bottom row and right column. They require hard methods, such as calculus.**

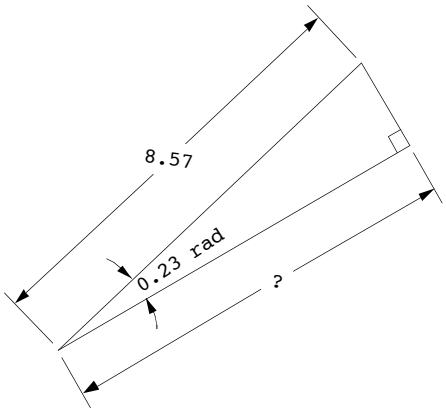
"Complementary" angles are two angles whose sum equals 90°. "Supplementary" angles are two angles whose

Page 1, Problems 9, 10
CIRCLE

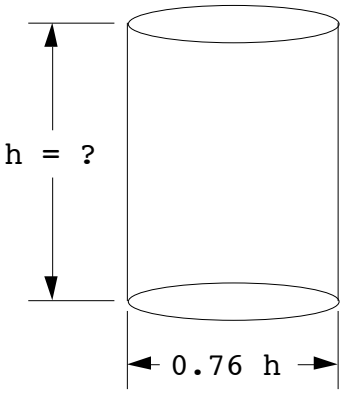


Area = 0.0295

Page 2, Problems 19, 20
RIGHT TRIANGLE

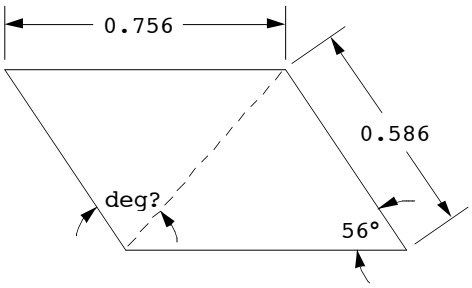


Page 3, Problems 29, 30
CYLINDER

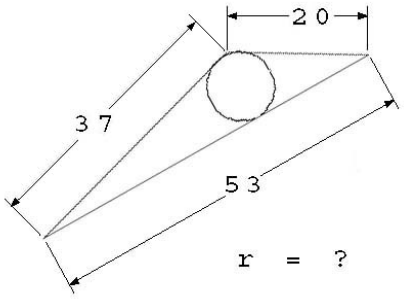


Volume = 948

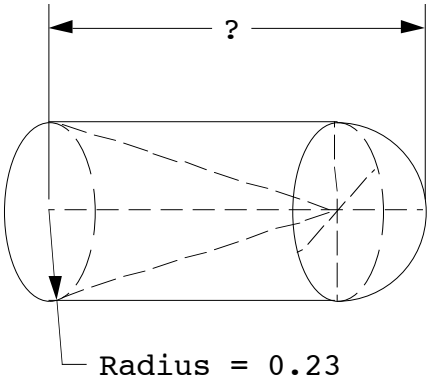
Page 4, Problem 39
PARALLELOGRAM



Page 4, Problem 40
SCALENE TRIANGLE

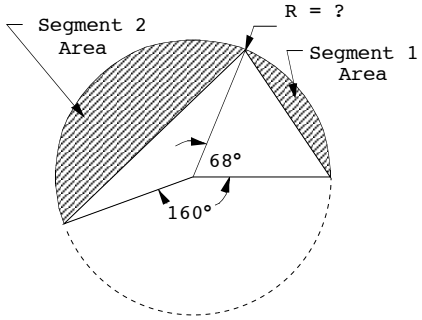


Page 5, Problems 49, 50
CYLINDER WITH CONICAL CAVITY AND HEMISPHERE



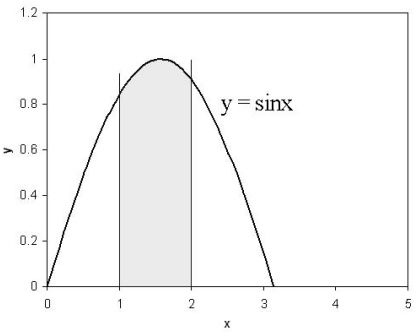
Volume = 0.134

Page 6, Problem 59
Page 7, Problems 69, 70
CIRCLE



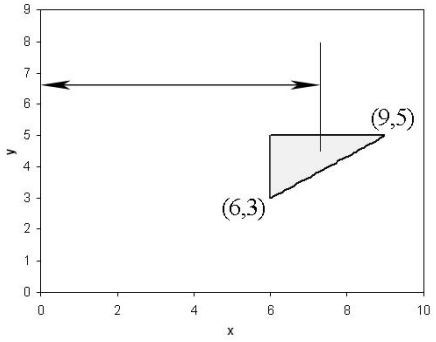
Segment 2 Area - Segment 1 Area = 89.4

Page 6, Problem 60



Shaded Area = ?

Page 6, Problem 60
Solid of Revolution



Volume = ?

§1.3 Sequences and Series Problems

Problem 1. Compute $1+2+\ldots+1000$.

Problem 2. Find the 16th term in the arithmetic sequence $1, 4, 7, 10, \ldots$.

Problem 3. Compute $2+4+6+\ldots+200$.

Problem 4. Compute $1+5+9+13+\ldots+101$.

Problem 5. Compute $(1+9+17+25+\ldots+97)-(2+3+4+\ldots+77)$.

Problem 6. Find the value of

$$\frac{1}{3}+\frac{1}{9}+\frac{1}{27}+\ldots.$$

Problem 7. Verify that

$$0.11111\ldots=\frac{1}{9},$$

using $0.11111\ldots=\frac{1}{10}+\frac{1}{100}+\frac{1}{1000}+\frac{1}{10000}+\ldots$.

Problem 8. Find the 20th term in the geometric sequence $1024, 512, 256, \ldots$.