

# Assignment #6-1

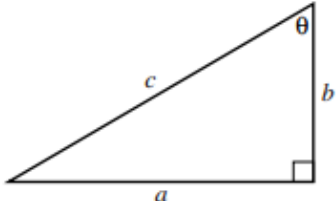
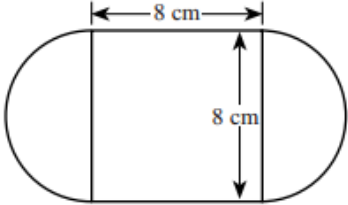
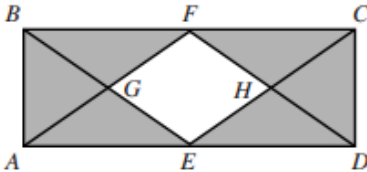
# Secondary 3 Honors

Precalculus Book: Pg. 193 1, 3, 6, 8, 10, 12, 13 – 16, 25, 32, 35, 37, 41, 45, 51, 70a & c, 72a & c, 74, 78

## Additional Problems:

- Simplify:  $\frac{9m^{-3}n}{15m^{-2}n^5}$
- Simplify:  $\sqrt{18} - 2\sqrt{32}$
- Graph the function without your calculator  $h(x) = -(x + 1)^4(x - 2)^2(x + 3)$ .
- Let  $f(x) = x^2 + 2$ ,  $g(x) = \sqrt{x - 2}$ , and  $h(x) = 6$ . Find:
  - $f(-3)$
  - $h(5)$
  - $g(f(x))$
  - $(f + g)(3)$
- Find  $\frac{dy}{dx}$  for  $y = -x^2 - 4x$  using the limit definition of a derivative. Show all work.

## ACT Review:

<p>1. The dimensions of the right triangle shown below are given in feet. What is <math>\sin \theta</math>?</p> <p>F. <math>\frac{a}{b}</math>                      G. <math>\frac{a}{c}</math>                      H. <math>\frac{b}{c}</math>                      J. <math>\frac{b}{a}</math>                      K. <math>\frac{c}{a}</math></p> 	<p>2. The figure below consists of a square and 2 semicircles, with dimensions as shown. What is the outside perimeter, in centimeters, of the figure?</p>  <p>A. <math>8 + 8\pi</math>                      B. <math>16 + 8\pi</math>                      C. <math>16 + 16\pi</math>                      D. <math>32 + 8\pi</math>                      E. <math>32 + 16\pi</math></p>
<p>3. The coordinates of the endpoints of <math>\overline{CD}</math>, in the standard <math>(x,y)</math> coordinate plane, are <math>(-4,-2)</math> and <math>(14,2)</math>. What is the <math>x</math>-coordinate of the midpoint of <math>\overline{CD}</math>?</p> <p>A. 0                      B. 2                      C. 5                      D. 9                      E. 10</p>	<p>4. What is the surface area, in square inches, of an 8-inch cube?</p> <p>F. 512                      G. 384                      H. 320                      J. 256                      K. 192</p>
<p>5. In the figure below, points <math>E</math> and <math>F</math> are the midpoints of sides <math>\overline{AD}</math> and <math>\overline{BC}</math> of rectangle <math>ABCD</math>, point <math>G</math> is the intersection of <math>\overline{AF}</math> and <math>\overline{BE}</math>, and point <math>H</math> is the intersection of <math>\overline{CE}</math> and <math>\overline{DF}</math>. The interior of <math>ABCD</math> except for the interior of <math>EGFH</math> is shaded. What is the ratio of the area of <math>EGFH</math> to the area of the shaded region?</p>  <p>F. 1:2                      G. 1:3                      H. 1:4                      J. 1:6                      K. Cannot be determined from the given information</p>	