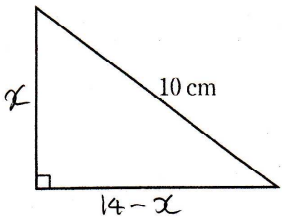
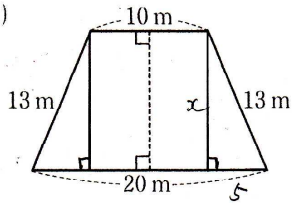
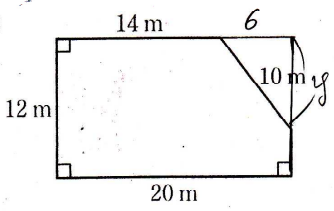
Ｐ１９１　７章の章末問題

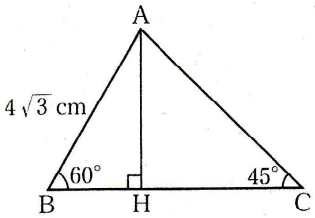


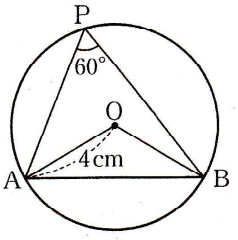
(1)

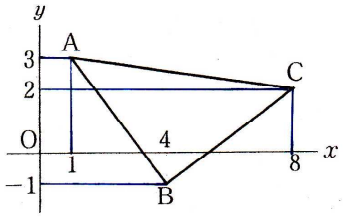


(2)









１．縦をｘｃｍ とすると　横は２４－１０－ｘ＝１４－ｘ

$x^2+(14-x)^2=10^2$

$x^2+196-28x+x^2=100$

$2x^2-28x+96=0$

$x^2-14x+48=0$

$(x-6)(x-8)=0$

$x=6,\ 8$

縦６ｃｍのとき　横８ｃｍ

縦８ｃｍのとき　横６ｃｍ

２．

（１）　$x^2+5^2=13^2$

$x^2+25=169$

$x^2=144$

$x=12$

$S=(10+20)\times 12\div 2=180\ \text{cm}^2$

（２）　$6^2+y^2=10^2$

$36+y^2=100$

$y^2=64$

$y=8$

$S=12\times 20-\dfrac{6\times 8}{2}$

$=240-24=216\ \text{cm}^2$

３．

$4\sqrt{3}$ ：ＢＨ＝２：１　　$BH=2\sqrt{3}$

$4\sqrt{3}$ ：ＡＨ＝２：$\sqrt{3}$　　２ＡＨ＝１２　ＡＨ＝６

ＣＨ＝６

$BC=2\sqrt{3}+6$　　$CA=6\sqrt{2}$

$S=\dfrac{(2\sqrt{3}+6)\times 6}{2}=6\sqrt{3}+18$

４．ＯからＡＢに垂線を下ろしＨとする。
　∠ＡＯＨ＝６０°である。

　ＡＯ：ＡＨ＝４：ＡＨ＝２：$\sqrt{3}$

$$\mathrm{AH}=2\sqrt{3}$$

$$\mathrm{AB}=4\sqrt{3}$$

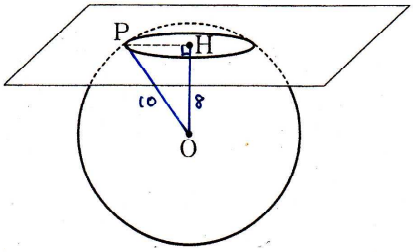
５．

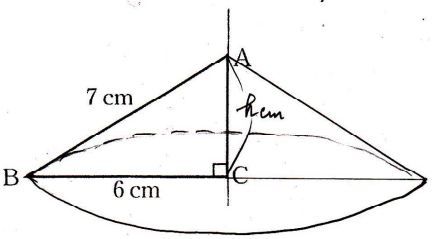
$\mathrm{AB}^2=4^2+3^2$　　$\mathrm{AB}^2=25$　　$\mathrm{AB}=5$

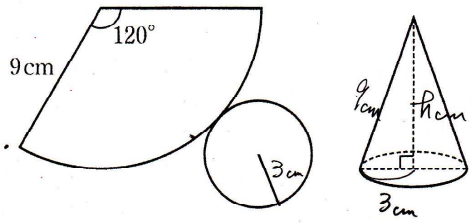
$\mathrm{BC}^2=4^2+3^2=25$　　$\mathrm{BC}=5$

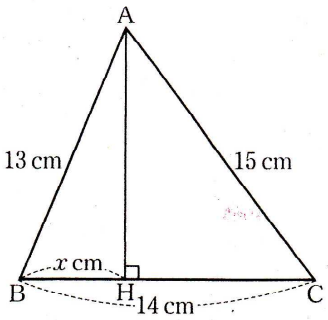
$\mathrm{AC}^2=7^2+1^2=50$　　$\mathrm{AC}=5\sqrt{2}$

直角二等辺三角形


P
H
10
8
O


A
7 cm
h cm
B
6 cm
C


120°
9 cm
3 cm
9 cm
h cm
3 cm


A
13 cm
15 cm
x cm
B
H
14 cm
C

6．

$8^2+PH^2=10^2$

$64+PH^2=100$

$PH^2=36$

$PH=6$ ｃｍ

7．

$6^2+h^2=7^2$

$36+h^2=49$

$h=\sqrt{13}$

$V=\frac{1}{3}\pi\times 36\times\sqrt{13}=12\sqrt{13}\pi$ ｃｍ^3

8．

$\frac{\text{半径}}{\text{母線}}=\frac{120}{360}$　　$\frac{\text{半径}}{9}=\frac{1}{3}$　　半径＝３ｃｍ

$3^2+h^2=9^2$

$9+h^2=81$

$h^2=72$

$h=6\sqrt{2}$　ｃｍ

9．

$x^2+AH^2=13^2$　$AH^2=13^2-x^2$

$(14-x)^2+AH^2=15^2$　$AH^2=15^2-(14-x)^2$

よって　$13^2-x^2=15^2-(14-x)^2$

$$169-x^2=225-(196-28x+x^2)$$

$$169-x^2=225-196+28x-x^2$$

$$28x=169-225+196=140$$

$$x=5$$

$5^2+h^2=13^2$

$25+h^2=169$

$h^2=144$　　$h=12$

$$S=\frac{14\times 12}{2}=84\ cm^2$$