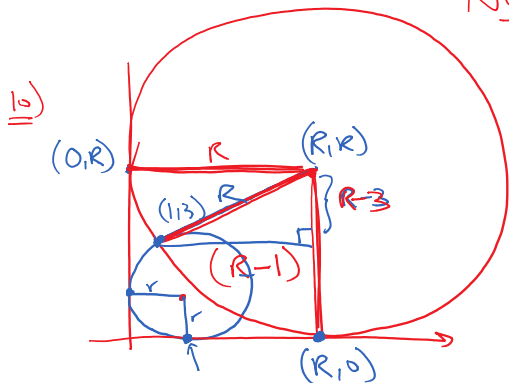


2b) $x^2 - x + 56 = -13$

$x^2 - x + 69 = 0$

C.T.S.
No soln



$(r+R)?$

$(R-1)^2 + (R-3)^2 = R^2$

$(x-h)^2 + (y-k)^2 = R^2$

$(x-R)^2 + (y-R)^2 = R^2$

$(x-r)^2 + (y-r)^2 = r^2$

① $(1-R)^2 + (3-R)^2 = R^2$

② $(1-r)^2 + (3-r)^2 = r^2$

$(1-R)^2 - (1-r)^2 + (3-R)^2 - (3-r)^2 = R^2 - r^2$

$\cancel{x-2R+R^2} - \cancel{(x-2r+r^2)} = \cancel{R^2} - \cancel{r^2}$
 $\cancel{9-6R+R^2} - \cancel{(9-6r+r^2)} = \cancel{R^2} - \cancel{r^2}$

$-8R + 8r + R^2 - r^2 = 0$

$-8(R-r) + (R+r)(R-r) = 0$

$(R+r)(R-r) = 8(R-r)$

18) $(x^5 + x^4) + (x^3 + x^2) + (x+1)$

$x^4(x+1) + x^2(x+1) + 1(x+1)$

$(x+1) [x^4 + x^2 + 1]$

$(x+1) (x^4 + x^2 + 1 + x^2 - x^2)$

$(x+1) (x^4 + 2x^2 + 1) - x^2$

$x^3(x^2+x+1) + 1(x^2+x+1)$
 $(x^2+x+1)(x^3+1)$
 $(x^2+x+1)(x+1)(x^2-x+1)$

$$(x+1) \left[\frac{(x^2+1)^2 - x^2}{2} \right]$$

$$(x+1) \left((x^2+1-x)(x^2+1+x) \right)$$

$$7) \quad x^4 - 4x^2 + 2 = 0$$

$$a=1 \quad b=-4 \quad c=2$$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$x^2 = \frac{4 \pm \sqrt{16 - 4(2)}}{2}$$

$$x^2 = \frac{4 \pm \sqrt{8}}{2}$$

$$x^2 = \frac{4 \pm 2\sqrt{2}}{2}$$

$$x^2 = 2 \pm \sqrt{2}$$

$$x = \pm \sqrt{2 \pm \sqrt{2}}$$

$$x_1 = \sqrt{2 + \sqrt{2}} \quad \leftarrow$$

$$x_2 = -\sqrt{2 + \sqrt{2}} \quad \leftarrow$$

$$x_3 = \sqrt{2 - \sqrt{2}}$$

$$x_4 = -\sqrt{2 - \sqrt{2}}$$

$$(1+r_1)(1+r_2)(1+r_3)(1+r_4)$$

$$\left(\underline{1 + \sqrt{2 + \sqrt{2}}} \right) \left(\underline{1 - \sqrt{2 + \sqrt{2}}} \right) \left(1 + \sqrt{2 - \sqrt{2}} \right) \left(1 - \sqrt{2 - \sqrt{2}} \right)$$