And $u_1u_4 = 2 - 6\sqrt{2}$. Therefore

$$x = [4(138 - 71\sqrt{2}) + \sqrt{\{16(138 - 71\sqrt{2})^2 - (2 - 6\sqrt{2})^5\}}]^{\frac{1}{5}}$$
$$+ [4(138 - 71\sqrt{2}) - \sqrt{\{16(138 - 71\sqrt{2})^2 - (2 - 6\sqrt{2})^5\}}]^{\frac{1}{5}}$$
$$+ [4(138 + 71\sqrt{2}) + \sqrt{\{16(138 + 71\sqrt{2})^2 - (2 + 6\sqrt{2})^5\}}]^{\frac{1}{5}}$$
$$+ [4(138 + 71\sqrt{2}) - \sqrt{\{16(138 + 71\sqrt{2})^2 - (2 + 6\sqrt{2})^5\}}]^{\frac{1}{5}}.$$

§46. *Twentieth Example.*—Let

$$x^5 - 20x^3 + 170x + 208 = 0.$$

Here $g = 2$, $k = 0$, and the commensurable values of y and t which satisfy (37) and (38) are

$$y = 2,\ t = 2.$$

Then in the usual way we get

$$B + B'\sqrt{z} = -12(1 - \sqrt{2}).$$

And $u_1u_4 = 2 + \sqrt{2}$. Therefore

$$x = [-12(1 - \sqrt{2}) + \sqrt{\{144(1 - \sqrt{2})^2 - (2 + \sqrt{2})^5\}}]^{\frac{1}{5}}$$
$$+ [-12(1 - \sqrt{2}) - \sqrt{\{144(1 - \sqrt{2})^2 - (2 + \sqrt{2})^5\}}]^{\frac{1}{5}}$$
$$+ [-12(1 + \sqrt{2}) + \sqrt{\{144(1 + \sqrt{2})^2 - (2 - \sqrt{2})^5\}}]^{\frac{1}{5}}$$
$$+ [-12(1 + \sqrt{2}) - \sqrt{\{144(1 + \sqrt{2})^2 - (2 - \sqrt{2})^5\}}]^{\frac{1}{5}}.$$