1.
$$R_4(x) = e^c \frac{x^5}{5!}$$

2.
$$R_5(x) = \frac{720}{(1-c)^7} \frac{x^6}{6!}$$

3.
$$R_5(x) = -\sin(c)\frac{x^6}{6!}$$

4.
$$R_6(x) = -\cos(c)\frac{x^7}{7!}$$

5.
$$R_6(x) = -\frac{-6}{c^2} \frac{(x-1)^4}{4!}$$