Exponential growth

> $u[1] := u0 \cdot \exp(r \cdot t);$

$$u_1 := u0\, e^{r\, t} \tag{1}$$

Logistic growth

> $u[2] := \dfrac{K}{1 + \exp(-r \cdot t) \cdot \left(\dfrac{K}{u0} - 1\right)};$

$$u_2 := \frac{K}{1 + e^{-r\, t}\left(\dfrac{K}{u0} - 1\right)} \tag{2}$$

Generalized Logistic growth

> $u[3] := \dfrac{K}{\left(1 + \exp(-r \cdot t) \cdot \left(\left(\dfrac{K}{u0}\right)^{g} - 1\right)\right)^{\frac{1}{g}}};$

$$u_3 := \frac{K}{\left(1 + e^{-r\, t}\left(\left(\dfrac{K}{u0}\right)^{g} - 1\right)\right)^{\frac{1}{g}}} \tag{3}$$

Gompertz growth

> $u[4] := K \cdot \exp\left(\ln\left(\dfrac{u0}{K}\right) \cdot \exp(-r \cdot t)\right);$

$$u_4 := K\, e^{\ln\left(\frac{u0}{K}\right) e^{-r\, t}} \tag{4}$$

```
> parameters := {u0 = 0.01, r = 1, K = 10} :
  plot({subs(parameters, u[1]),
        subs(parameters, u[2]),
        subs(parameters union {g = 0.5}, u[3]),
        subs(parameters union {g = 1.5}, u[3]),
        subs(parameters union {g = 2.0}, u[3]),
        subs(parameters, u[4])}, t = 0..15, 0..11);
```