

ДЗ№2.

Задание 1.

$$pair = \lambda a . \lambda b . \lambda t . t \ a \ b$$

$$fst = \lambda p . p \ true$$

$$snd = \lambda p . p \ false$$

Задание 2.

$$\lambda yz.xyw(zx) \quad [x := \lambda y.yw] = \lambda yz.(\lambda y.yw)yw(z(\lambda y.yw)) = \lambda yz.yww(z(\lambda y.yw))$$

$$\lambda xy.xy(\lambda x.xy)x \quad [x := \lambda z.z] = (\text{все } x \text{ зависимы}) = \lambda xy.xyx = \omega$$

$$xy(\lambda xz.xyz)y \quad [y := xz] = x(xz)(\lambda x'z'.x'(xz)z')xz$$

Задание 3.

$$SKKx = K \ x(Kx) = x = Ix$$

$$S(KS)Kxyz = K \ Sx \ (Kx) \ y \ z = S(Kx) \ y \ z = Kxy \ (yz) = x(yz) = Bxyz$$