												$\overline{\Gamma \vdash \mathbb{N} \text{ type}} \qquad \overline{\Gamma, m \colon \mathbb{N} \vdash m \colon \mathbb{N}}^{o} \qquad \overline{\Gamma \vdash \mathbb{N} \text{ type}} \qquad \overline{\Gamma, n \colon \mathbb{N} \vdash n \colon \mathbb{N}}^{o} \qquad \overline{\Gamma, n \colon \mathbb{N} \vdash n \colon \mathbb{N}}^{o}$	$\frac{\overline{\Gamma, m : \mathbb{N}, n : \mathbb{N} \vdash \mathbf{s} : \mathbb{N} \to \mathbb{N}}}{\overline{\Gamma, m : \mathbb{N}, n : \mathbb{N} \vdash \mathbf{ap_s} : \Pi_{(x : \mathbb{N})} \Pi_{(y : \mathbb{N})}(x = y \to \mathbf{s}(x) = \mathbf{s}(y))}}$
										$\overline{\Gamma \vdash s : \mathbb{N} \to \mathbb{N}} \qquad \overline{\Gamma \vdash \mathbb{N} \text{ type}}$	$\Gamma \vdash s : \mathbb{N} \to \mathbb{N}$	$\frac{\Gamma \vdash \mathbb{N} \text{ type}}{\Gamma, m : \mathbb{N}, n : \mathbb{N} \vdash m : \mathbb{N}} W \qquad \frac{\Gamma \vdash \mathbb{N} \text{ type} \qquad \Gamma, n : \mathbb{N} \vdash n : \mathbb{N}}{\Gamma, m : \mathbb{N}, n : \mathbb{N} \vdash n : \mathbb{N}} V$	$\overline{\Gamma, m : \mathbb{N}, n : \mathbb{N} \vdash \operatorname{ap}_{s} : \Pi_{(x:\mathbb{N})} \Pi_{(y:\mathbb{N})}(x = y \to s(x) = s(y))}$
									$\overline{\Gamma \vdash \mathbb{N} \text{ type}}$ $\Gamma \vdash \mathbb{N} \text{ type}$	$\frac{\overline{\Gamma \vdash \mathbb{N} \text{ type}} \overline{\Gamma, m \colon \mathbb{N} \vdash \mathbf{s}(m) \colon \mathbb{N}}^{\text{ev}}}{\Gamma, m \colon \mathbb{N}, \ n \colon \mathbb{N} \vdash \mathbf{s}(m) \colon \mathbb{N}} W \qquad \frac{\overline{\Gamma \vdash \mathbb{N} \text{ type}} \overline{\Gamma, n \colon \mathbb{N} \vdash n \colon \mathbb{N}}}{\Gamma, \ m \colon \mathbb{N}, \ n \colon \mathbb{N} \vdash n \colon \mathbb{N}}$	$\frac{\Gamma}{\Gamma} \vdash \mathbb{N} \text{ type} \qquad \frac{\Gamma}{\Gamma} \vdash \mathbb{N} \text{ type} \qquad \frac{\Gamma}{\Gamma} \vdash \mathbb{N} \text{ type}$	$\Gamma, n \colon \mathbb{N} \vdash n \colon \mathbb{N}$ $\Gamma, m \colon \mathbb{N}, n \colon \mathbb{N} \vdash (m+n) \colon \mathbb{N}$	$\frac{10DO}{\Gamma, m: \mathbb{N}, n: \mathbb{N}, x: \mathbb{N} \vdash \operatorname{ap}_{\operatorname{s}}(x) : \Pi_{(y:\mathbb{N})}(x=y \to \operatorname{s}(x) = \operatorname{s}(y))} e^{\operatorname{ev}}$
						$\Gamma \vdash \mathbb{N} \text{ type}$	$\Gamma \vdash s : \mathbb{N} \to \mathbb{N}$	$\Gamma \vdash s : \mathbb{N} \to \mathbb{N}$	$\overline{\Gamma \vdash \mathbb{N} \text{ type}} \qquad \overline{\Gamma, m \colon \mathbb{N} \vdash m \colon \mathbb{N}}^{\delta} \qquad \overline{\Gamma \vdash \mathbb{N} \text{ type}} \qquad \overline{\Gamma, n \colon \mathbb{N} \vdash n \colon \mathbb{N}}^{\delta}$			$\mathbb{N}, n : \mathbb{N} \vdash n : \mathbb{N}$ $\Gamma, m : \mathbb{N}, n : \mathbb{N} \vdash \mathrm{s}(m+n) : \mathbb{N}$	$\Gamma, m: \mathbb{N}, n: \mathbb{N}, x: \mathbb{N}, y: \mathbb{N} \vdash \operatorname{ap}_{s}(x, y): x = y \to s(x) = s(y)$
					$\Gamma \vdash s : \mathbb{N} \to \mathbb{N}$	$\overline{\Gamma \vdash \mathbf{s} : \mathbb{N} \to \mathbb{N}} \qquad \overline{\Gamma \vdash \mathbb{N} \text{ type}} \qquad \overline{\Gamma, m : \mathbb{N} \vdash m : \mathbb{N}}^{o}$	$\overline{\Gamma \vdash \mathbb{N} \text{ type}} \qquad \overline{\Gamma, m \colon \mathbb{N} \vdash m \colon \mathbb{N}}^{O} \qquad \overline{\Gamma \vdash \mathbb{N} \text{ type}} \qquad \overline{\Gamma, n \colon \mathbb{N} \vdash \mathbf{s}(n) \colon \mathbb{N}}^{\text{ev}}$	$\overline{\Gamma \vdash \mathbb{N} \text{ type}} \qquad \overline{\Gamma, r : \mathbb{N} \vdash s(r) : \mathbb{N}} \overset{\text{ev}}{\longrightarrow} W$	${\Gamma,m\!:\!\mathbb{N},n\!:\!\mathbb{N}\vdash m\!:\!\mathbb{N}} \qquad {\Gamma,m\!:\!\mathbb{N},n\!:\!\mathbb{N}\vdash n\!:\!\mathbb{N}} W$	$\Gamma, m: \mathbb{N}, n: \mathbb{N} \vdash s(m) + s(n) \equiv s(s(m) + n) : \mathbb{N}$	$\Gamma, m : \mathbb{N}, n : \mathbb{N} \vdash (s(m)+n) : \mathbb{N}$	$\Gamma, m: \mathbb{N}, n: \mathbb{N}, x: \mathbb{N} \vdash \operatorname{ap}_{s}(x, s(m))$	$(+n)$: $x = s(m+n) \to s(x) = s(s(m+n))$
				$\overline{\Gamma \vdash \mathbb{N} \text{ type}} \qquad \overline{\Gamma, m : \mathbb{N} \vdash \mathbf{s}(m) : \mathbb{N}}^{\text{ev}} \qquad \overline{\Gamma \vdash \mathbb{N} \text{ type}}$	$\Gamma, n: \mathbb{N} \vdash \mathbf{s}(n) : \mathbb{N} \stackrel{\text{ev}}{=} \Gamma, m: \mathbb{N}, n: \mathbb{N} \vdash m: \mathbb{N}$	${\Gamma, m \colon \mathbb{N}, n \colon \mathbb{N} \vdash m \colon \mathbb{N}} W \qquad {\Gamma, m \colon \mathbb{N}, n \colon \mathbb{N} \vdash \mathrm{s}(n) \colon \mathbb{N}} W$	${\Gamma \vdash \mathbb{N} \text{ type}} \qquad {\Gamma, n: \mathbb{N}, r: \mathbb{N} \vdash \mathbf{s}(r): \mathbb{N}} W$	$\Gamma, m: \mathbb{N}, n: \mathbb{N} \vdash m + s(n) \equiv s(m+n) : \mathbb{N}$	$\Gamma, m: \mathbb{N}, n: \mathbb{N} \vdash s(s(m) + n) \equiv s(m) + s(n) : \mathbb{N}$	$\Gamma, m: \mathbb{N}, n: \mathbb{N} \vdash \operatorname{ap_s}(\operatorname{s}(m) + n, \operatorname{s}(m+n)) : \operatorname{s}(m) + n = \operatorname{s}(m+n) \to \operatorname{s}(\operatorname{s}(m) + n) = \operatorname{s}(\operatorname{s}(m+n))$		(n+n)	
	$\overline{\Gamma \vdash \mathbb{N} \text{ type}}$ $\overline{\Gamma \vdash \mathbb{N} \text{ type}}$ $\overline{\Gamma \vdash \mathbb{N} \text{ type}}$				${\Gamma, m : \mathbb{N}, n : \mathbb{N} \vdash \mathrm{s}(m) : \mathbb{N}} W \qquad {\Gamma, m : \mathbb{N}, n}$	$n: \mathbb{N} \vdash \mathbf{s}(n): \mathbb{N}$ $\Gamma, m: \mathbb{N},$	$n: \mathbb{N} \vdash (m+\mathrm{s}(n)): \mathbb{N}$	$\Gamma, m: \mathbb{N}, n: \mathbb{N}, r: \mathbb{N} \vdash \mathbf{s}(r): \mathbb{N}$	$\Gamma, m: \mathbb{N}, n: \mathbb{N} \vdash s(m+n) \equiv m + s(n) : \mathbb{N}$	$\Gamma, m: \mathbb{N}, n: \mathbb{N}, a: \mathbf{s}(m) + n = \mathbf{s}(m+n) \vdash \mathbf{s}(\mathbf{s}(m) + n) \equiv \mathbf{s}(m) + \mathbf{s}(n) : \mathbb{N}$		$\Gamma, m \colon \mathbb{N}, n \colon \mathbb{N}, a \colon \mathbf{s}(m) + n = \mathbf{s}(m+n) \vdash \mathrm{ap}_{\mathbf{s}}(\mathbf{s}(m) + n, \mathbf{s}(m+n))(a) \colon \mathbf{s}(\mathbf{s}(m) + n) = \mathbf{s}(m+n) \vdash \mathrm{ap}_{\mathbf{s}}(\mathbf{s}(m) + n, \mathbf{s}(m+n))(a) : \mathbf{s}(\mathbf{s}(m) + n) = \mathbf{s}(m+n) \vdash \mathrm{ap}_{\mathbf{s}}(\mathbf{s}(m) + n, \mathbf{s}(m+n))(a) : \mathbf{s}(\mathbf{s}(m) + n) = \mathbf{s}(m+n) \vdash \mathrm{ap}_{\mathbf{s}}(\mathbf{s}(m) + n, \mathbf{s}(m+n))(a) : \mathbf{s}(\mathbf{s}(m) + n) = \mathbf{s}(m+n) \vdash \mathrm{ap}_{\mathbf{s}}(\mathbf{s}(m) + n, \mathbf{s}(m+n))(a) : \mathbf{s}(\mathbf{s}(m) + n) = \mathbf{s}(m+n) \vdash \mathrm{ap}_{\mathbf{s}}(\mathbf{s}(m) + n, \mathbf{s}(m+n))(a) : \mathbf{s}(\mathbf{s}(m) + n) = \mathbf{s}(m+n) \vdash \mathrm{ap}_{\mathbf{s}}(\mathbf{s}(m) + n, \mathbf{s}(m+n))(a) : \mathbf{s}(\mathbf{s}(m) + n) = \mathbf{s}(m+n) \vdash \mathrm{ap}_{\mathbf{s}}(\mathbf{s}(m) + n, \mathbf{s}(m+n))(a) : \mathbf{s}(\mathbf{s}(m) + n) = \mathbf{s}(m+n) \vdash \mathrm{ap}_{\mathbf{s}}(\mathbf{s}(m) + n, \mathbf{s}(m+n))(a) : \mathbf{s}(\mathbf{s}(m) + n) = \mathbf{s}(m+n) \vdash \mathrm{ap}_{\mathbf{s}}(\mathbf{s}(m) + n, \mathbf{s}(m+n))(a) : \mathbf{s}(\mathbf{s}(m) + n) = \mathbf{s}(m+n) \vdash \mathrm{ap}_{\mathbf{s}}(\mathbf{s}(m) + n, \mathbf{s}(m+n))(a) : \mathbf{s}(\mathbf{s}(m) + n, \mathbf{s}(m) + n) = \mathbf{s}(m+n) \vdash \mathrm{ap}_{\mathbf{s}}(\mathbf{s}(m) + n, \mathbf{s}(m) + n)(a) : \mathbf{s}(\mathbf{s}(m) + n, $	$\overline{s(s(m+n))}$
$\frac{\overline{\Gamma \vdash \mathbb{N} \text{ type}} \overline{\Gamma \vdash \mathbb{s} : \mathbb{N} \to \mathbb{N}}}{\Gamma, m : \mathbb{N} \vdash \mathbb{s}(m) : \mathbb{N}} \text{ev}} W \qquad \frac{\overline{\Gamma \vdash \mathbb{N} \text{ type}}}{\Gamma, n : \mathbb{N} \vdash n : \mathbb{N}} \delta}{\Gamma, m : \mathbb{N}, n : \mathbb{N} \vdash \mathbb{s}(m) : \mathbb{N}} W$	$\frac{\overline{\Gamma \vdash \mathbb{N} \text{ type}} \overline{\Gamma, m \colon \mathbb{N} \vdash m \colon \mathbb{N}}^{\delta}}{\Gamma, m \colon \mathbb{N}, n \colon \mathbb{N} \vdash m \colon \mathbb{N}} W \qquad \frac{\overline{\Gamma \vdash \mathbb{N} \text{ type}} \overline{\Gamma, n \colon \mathbb{N} \vdash n \colon \mathbb{N}}^{\delta}}{\Gamma, m \colon \mathbb{N}, n \colon \mathbb{N} \vdash n \colon \mathbb{N}} W$	$\frac{\overline{\Gamma \vdash \mathbb{N} \text{ type}}}{\Gamma, m : \mathbb{N} \vdash m : \mathbb{N}} \delta$	$\frac{\overline{\Gamma} \vdash \mathbf{s} : \mathbb{N} \to \mathbb{N}}{\Gamma, \ m : \mathbb{N} \vdash \mathbf{s}(m) : \mathbb{N}} \text{ ev}$	$\frac{\overline{\Gamma \vdash \mathbf{s} : \mathbb{N} \to \mathbb{N}}}{\Gamma, \ m : \mathbb{N} \vdash \mathbf{s}(m) : \mathbb{N}} \text{ ev}$	$\Gamma, m \colon \mathbb{N}, n \colon \mathbb{N} \vdash (\mathrm{s}(m) + \mathrm{s}(n)) \colon \mathbb{N}$ $\Gamma, m \colon \mathbb{N}, n \colon \mathbb{N} \vdash \mathrm{s}(m + \mathrm{s}(n)) \colon \mathbb{N}$			$\Gamma, m: \mathbb{N}, n: \mathbb{N}, a: \mathbf{s}(m) + n = \mathbf{s}(m+n) \vdash \mathbf{s}(m+n) \equiv m + \mathbf{s}(n) : \mathbb{N}$		$\Gamma, m : \mathbb{N}, a : s(m) + n = s(m+n) \vdash ap_{s}(s(m) + n, s(m+n))(a) : s(m) + s(n) = s(s(m+n))$			
$\overline{\Gamma \vdash \mathbb{N} \text{ type}} \qquad \overline{\Gamma, m \colon \mathbb{N} \vdash \mathbf{s}(m) \colon \mathbb{N}}^{\text{ev}} \qquad \overline{\Gamma \vdash \mathbb{N} \text{ type}} \qquad \overline{\Gamma, n \colon \mathbb{N} \vdash n \colon \mathbb{N}}^{\delta}$	${\Gamma, m \colon \mathbb{N}, n \colon \mathbb{N} \vdash m \colon \mathbb{N}} \qquad {\Gamma, m \colon \mathbb{N}, n \colon \mathbb{N} \vdash n \colon \mathbb{N}} \qquad \qquad $	$\overline{\Gamma, m : \mathbb{N} \vdash m : \mathbb{N}}^{o}$	$\Gamma, m : \mathbb{N} \vdash s(m) : \mathbb{N} \stackrel{\text{ev}}{}$	$\overline{\Gamma, m : \mathbb{N} \vdash s(m) : \mathbb{N}}$ ev	$\Gamma, m : \mathbb{N}, n : \mathbb{N} \vdash (s(m) + s(n) = s(m + s(n))) \text{ type}$				$\Gamma, \ m: \mathbb{N}, \ n: \mathbb{N}, \ a: \mathbf{s}(m) + n = \mathbf{s}(m+n) \vdash \mathrm{ap_s}(\mathbf{s}(m) + n, \mathbf{s}(m+n))(a) \ : \ \mathbf{s}(m) + \mathbf{s}(n) = \mathbf{s}(m+\mathbf{s}(n))$				
${\Gamma, m \colon \mathbb{N}, n \colon \mathbb{N} \vdash \mathbf{s}(m) \colon \mathbb{N}} W \qquad {\Gamma, m \colon \mathbb{N}, n \colon \mathbb{N} \vdash n \colon \mathbb{N}} W$	$\Gamma, m : \mathbb{N}, n : \mathbb{N} \vdash (m+n) : \mathbb{N}$	$\frac{1000}{\Gamma, m : \mathbb{N} \vdash m + 0 \equiv m : \mathbb{N}}$		$\overline{\mathbb{N}}$ $\overline{\Gamma, m : \mathbb{N} \vdash \operatorname{refl}_{s(m)} : s(m) = s(m)}$						$(s(m+n))(a) : s(m) + n = s(m+n) \to s(m) + s(n) = s(m+s(n))$			
$\Gamma, m : \mathbb{N}, n : \mathbb{N} \vdash (\mathbf{s}(m) + n) : \mathbb{N}$	$\Gamma, m : \mathbb{N}, n : \mathbb{N} \vdash s(m+n) : \mathbb{N}$	$\overline{\Gamma, m : \mathbb{N} \vdash m \equiv m + 0 : \mathbb{N}} \qquad \overline{\Gamma, m : \mathbb{N} \vdash \operatorname{refl}_{s(m)} : s(m) + 0 = s(m)}$			$\Gamma, m: \mathbb{N}, n: \mathbb{N} \vdash \operatorname{ap_s}(\operatorname{s}(m) + n, \operatorname{s}(m+n)) : \operatorname{s}(m) + n = \operatorname{s}(m+n) \to \operatorname{s}(m) + \operatorname{s}(n) = \operatorname{s}(m+n)$								
$\Gamma, m : \mathbb{N}, n : \mathbb{N} \vdash (s(m) + n = s(m+n)) \text{ type}$		$\Gamma, m : \mathbb{N} \vdash \operatorname{refl}_{\mathbf{s}(m)} : \mathbf{s}(m) + 0 = \mathbf{s}(m+0)$			$\Gamma, m: \mathbb{N} \; \vdash \; \lambda n. \mathrm{ap}_{\mathrm{s}}(\mathrm{s}(m) + n, \mathrm{s}(m+n)) : \Pi_{(n:\mathbb{N})} \left(\mathrm{s}(m) + n = \mathrm{s}(m+n) ightarrow \mathrm{s}(m) + \mathrm{s}(n) = \mathrm{s}(m+\mathrm{s}(n)) ight)$								
							$\Gamma, m: \mathbb{N} \vdash$	$\operatorname{ind}_{\mathbb{N}}(\operatorname{refl}_{\operatorname{s}(m)}, \lambda n. \operatorname{ap}_{\operatorname{s}}(\operatorname{s}(m) + n, \operatorname{s}(m+n))) : \Pi_{(n:\mathbb{N})}(\operatorname{s}(m) + n = \operatorname{s}(n))$	(m+n)				
							$\Gamma \vdash \lambda m.$ ii	$\operatorname{nd}_{\mathbb{N}}(\operatorname{refl}_{s(m)}, \lambda n.\operatorname{ap}_{s}(s(m)+n, s(m+n))) : \Pi_{(m:\mathbb{N})}\Pi_{(n:\mathbb{N})}(s(m)+n)$	= s(m+n))				