

T01.

a) (5 points)	$r_p =$
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b) (2 points)	$T =$ Yes ☐ No ☐
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c) (3 points)	$\frac{a}{b} =$
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T02.

a) (5 points)	$\delta_1 \simeq$ $\delta_2 \simeq$
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b) (3 points)	
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c) (2 points)	$T \simeq$
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T03.

a) (2 points)	$\Phi_{\text{eff}}(r, z) =$
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b) (5 points)	$\Phi_{\text{eff}}(x) =$ θ_0
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c) (3 points)	
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T04.

a) (2.5 points)	$k_1 =$
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b) (2.5 points)	$k_2 =$
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c) (1.5 points)	$\tau =$
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d) (3.5 points)	$M_{\text{eject}} =$
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T06.

a) (5 points)	$N_\nu =$
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b) (6 points)	$E_{\nu,\min} \approx$
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c) (9 points)	$\alpha =$ $\frac{\Delta T}{T} =$
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T07.

a) (4 points)	
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b) (4 points)	$z_{\min} =$ $z_{\text{limit}} =$
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c) (3 points)	$\Delta t =$
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T07.

d) (4 points)	$\phi_{\max} =$ $\phi_{\min} =$
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T08.

Part 1: a) (2 points)	$b =$
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Part 1: b) (4 points)	
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Part 1: c) (2 points)	$T =$
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Part 1: d) (2 points)	$d =$
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T08.

Part 2: a) (6 points)	$x =$ $y =$ $z =$ $V_x =$ $V_y =$ $V_z =$
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Part 2: b) (7 points)	
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T08.

Part 2: c) (2 points)	$i =$
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T09.

Part 1: a) (2 points)	$d_S =$ $d_L =$
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Part 1: b) (3 points)	$\theta =$
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Part 1: c) (3 points)	$b =$ $M =$
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T09.

Part 1: d) (7 points)	$x =$ $x' =$ $\Delta\theta =$
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Part 2: a) (2 points)	$2\alpha =$
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Part 2: b) (3 points)	$\delta =$
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T10.

a) (5 points)	
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b) (5 points)	
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c) (5 points)	$E^2(z) =$
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d) (5 points)	$w_0 + w_a$
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T11.

Part 1: a) (6 points)	$\rho_Z =$
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Part 1: b) (6 points)	$A =$ $\varphi =$
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T11.

Part 1: c) (8 points)	Density () <!-- Grid content --> Distance ()
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T11.

Part 1: c) (8 points)	Pressure () <!-- Grid content --> Distance ()
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T11.

Part 1: d) (3 points)	$M_Z =$ $M_H =$
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Part 2: a) (6 points)	
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Part 2: b) (7 points)	$M_{12} =$
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Part 2: c) (14 points)	$M_1 =$ $M_2 =$
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T12.

Part 1: a) (10 points)	
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Part 1: b) (3 points)	$\Sigma_{obs} =$
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Part 2 (8 points)	$\Sigma_{int} =$
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Part 3: a) (6 points)	
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T12.

Part 3: b) (7 points)	$\Sigma_{\text{Edd}} =$
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Part 3: c) (5 points)	$\frac{\Sigma_{\text{SFR}_{\text{actual}}}}{\Sigma_{\text{Edd}}} =$ Yes ☐ No ☐
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Part 4: a) (4 points)	$M =$ A ☐ B ☐ C ☐ D ☐
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Part 4: b) (7 points)	Yes ☐ No ☐
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