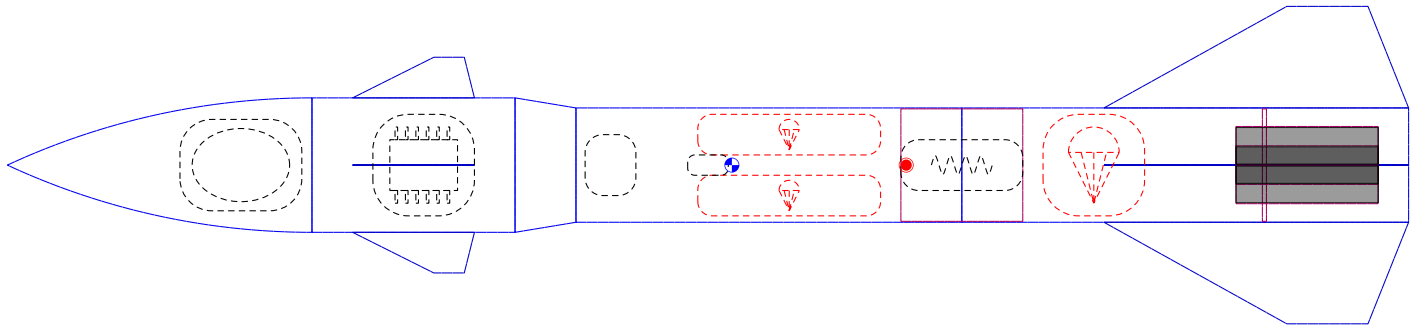


Rocket Design





















Rocket  
Stages: 1  
Mass (with motor): 624 g  
Stability: 1.3 cal  
CG: 35.7 cm  
CP: 44.3 cm

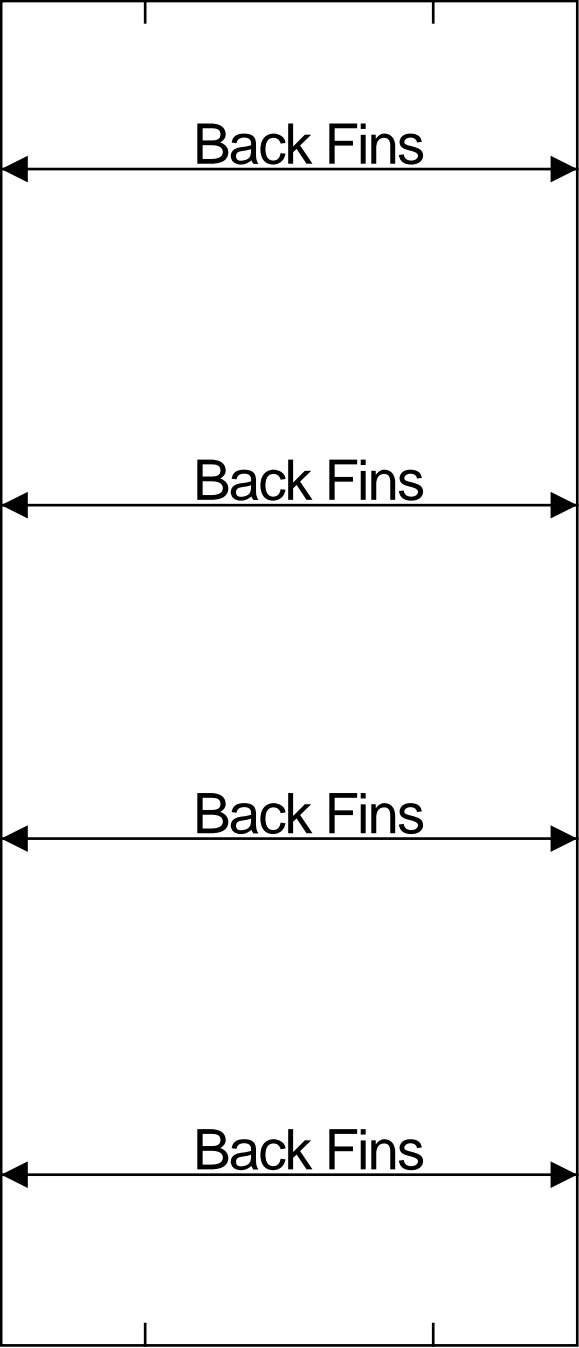
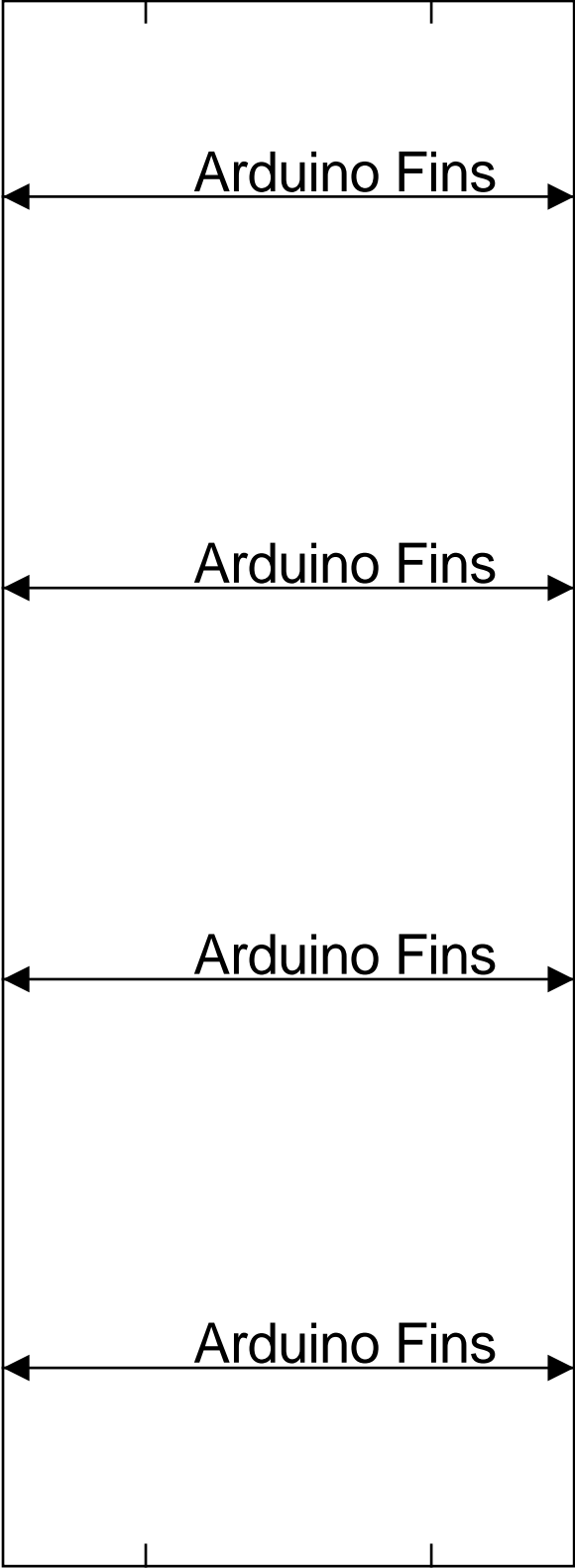
3xD9-5

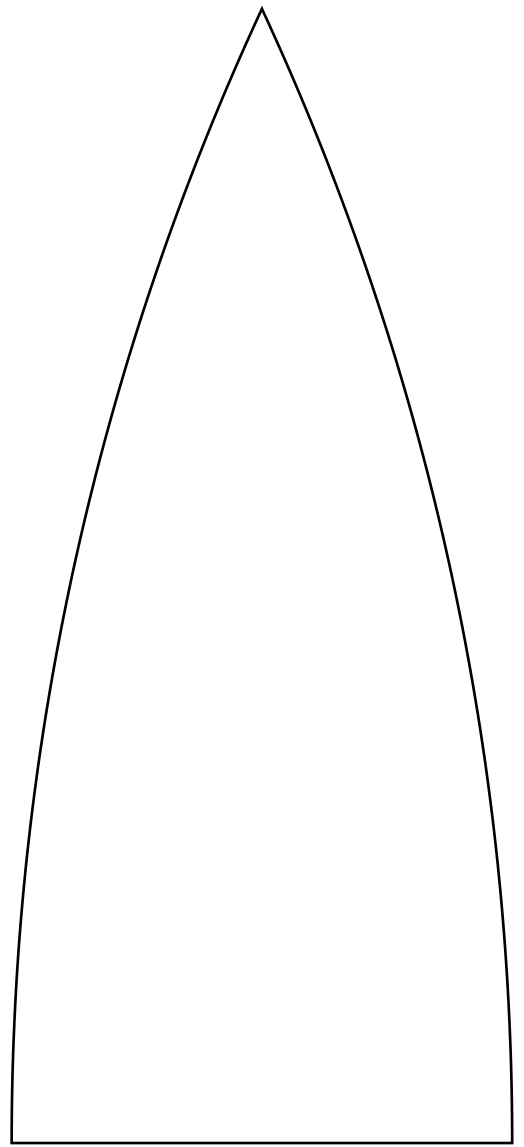
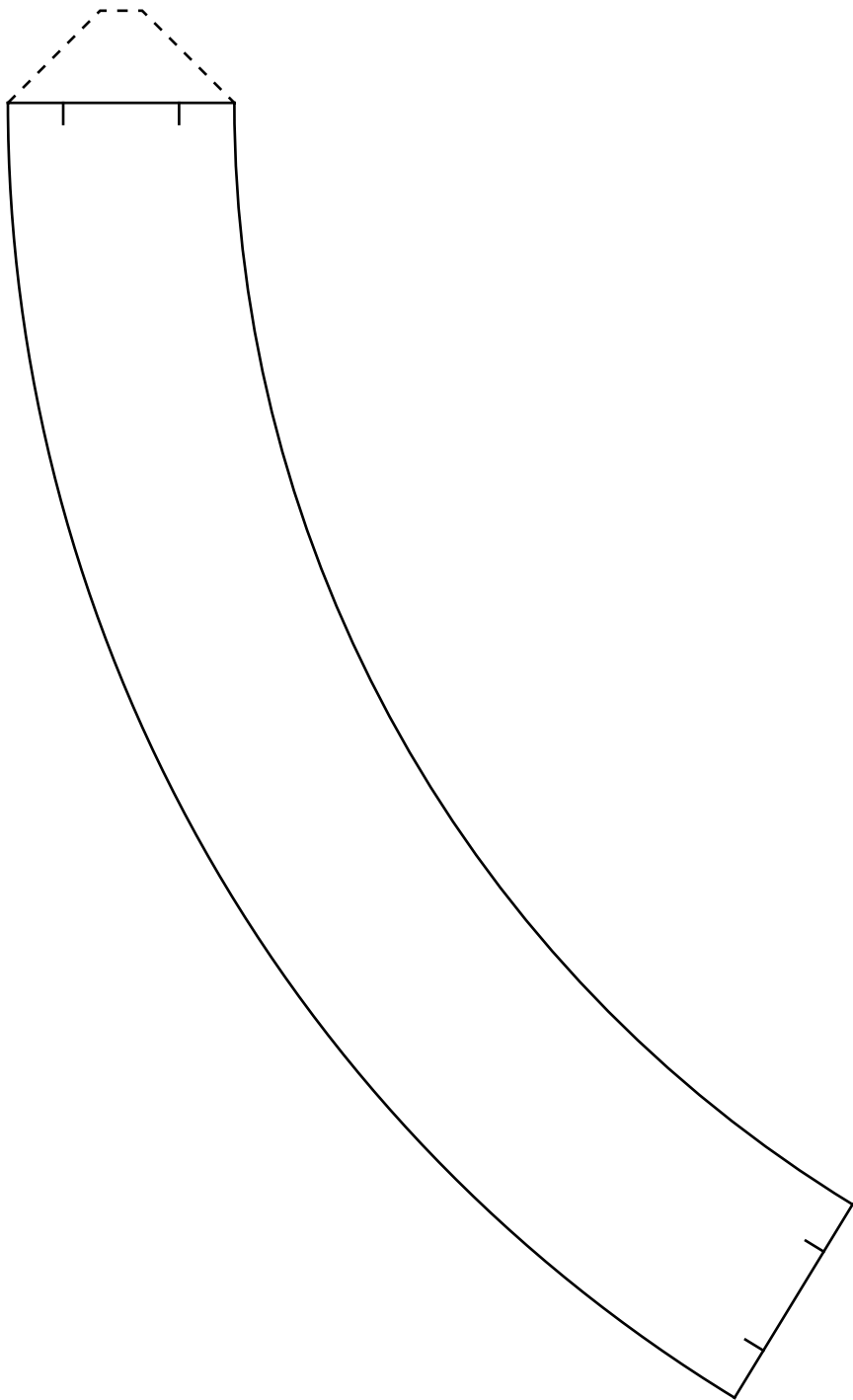
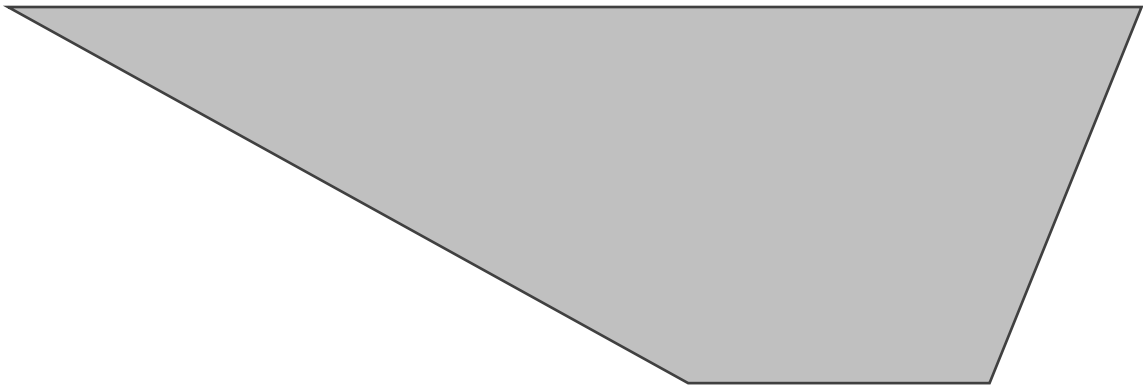
Altitude	293 m	Motor	Avg Thrust	Burn Time	Max Thrust	Total Impulse	Thrust to Wt	Propellant Wt	Size
Flight Time	44.4 s	D9 (×3)	9.16 N	2.18 s	25 N	20 Ns	1.50:1	16.1 g	18/70 mm
Time to Apogee	7.99 s	Total:				59.9 Ns	4.49:1	48.3 g	
Optimum Delay	6.09 s								
Velocity off Pad	13.5 m/s								
Max Velocity	72.4 m/s								
Velocity at Deployment	8.8 m/s								
Landing Velocity	4.81 m/s								

## Parts Detail

### Sustainer

	Nose cone	3D Print (1.23 g/cm³)	Ogive	Len: 15 cm	Mass: 20.7 g
	Body tube	3D Print (1.23 g/cm³)	Dia <sub>in</sub> 6.46 cm Dia <sub>out</sub> 6.62 cm	Len: 10 cm	Mass: 20.2 g
	Egg		Dia <sub>out</sub> 4.5 cm		Mass: 63 g
	Arduino Fins (4)	3D Print (1.23 g/cm³)	Thick: 0.5 cm		Mass: 3 g
	Arduino + Payloads		Dia <sub>out</sub> 5 cm		Mass: 73 g
	Transition	3D Print (1.23 g/cm³)	Fore Dia: 6.62 cm Aft Dia: 5.63 cm	Len: 3 cm	Mass: 8.46 g
	Main Body	Cardboard (0.68 g/cm³)	Dia <sub>in</sub> 5.53 cm Dia <sub>out</sub> 5.63 cm	Len: 19 cm	Mass: 11.3 g
	Parachute 1	Ripstop nylon (67 g/m²)	Dia <sub>out</sub> 50 cm	Len: 9 cm	Mass: 16.4 g
	Shroud Lines	Elastic cord (round 2 mm, 1/16 in) (1.8 g/m)	Lines: 6	Len: 30 cm	
	Parachute 1	Ripstop nylon (67 g/m²)	Dia <sub>out</sub> 50 cm	Len: 9 cm	Mass: 16.4 g
	Shroud Lines	Elastic cord (round 2 mm, 1/16 in) (1.8 g/m)	Lines: 6	Len: 30 cm	
	Parachute Servo		Dia <sub>out</sub> 1 cm		Mass: 10 g
	Unspecified		Dia <sub>out</sub> 3 cm		Mass: 200 g
	Boost	Cardboard (0.68 g/cm³)	Dia <sub>in</sub> 5.54 cm Dia <sub>out</sub> 5.63 cm	Len: 22 cm	Mass: 11.8 g
	Back Fins (4)	Balsa (0.17 g/cm³)	Thick: 1 cm		Mass: 27.5 g
	Engines	Cardboard (0.68 g/cm³)	Dia <sub>in</sub> 1.8 cm Dia <sub>out</sub> 1.9 cm	Len: 7 cm	Mass: 4.15 g
	Tube Coupler	Cardboard (0.68 g/cm³)	Dia <sub>in</sub> 5.34 cm Dia <sub>out</sub> 5.54 cm	Len: 6 cm	Mass: 6.97 g
	Shock cord	Elastic cord (round 2 mm, 1/16 in) (1.8 g/m)		Len: 40 cm	Mass: 0.72 g
	Parachute Back	Ripstop nylon (67 g/m²)	Dia <sub>out</sub> 45 cm	Len: 5 cm	Mass: 13.9 g
	Shroud Lines	Elastic cord (round 2 mm, 1/16 in) (1.8 g/m)	Lines: 6	Len: 30 cm	
	Bulkhead	Cardboard (0.68 g/cm³)	Dia <sub>out</sub> 5.54 cm	Len: 0.2 cm	Mass: 27 g





in cm

