1. Start — 20kg sled → Finish

$d = 0m$, $t = 0s$, $V = 0m/s$

$V_{Ave} = \frac{16m}{6s} = 2.67m/s$

$d = 16m$, $t = 6s$, $V = 5.33m/s$

$$a = \frac{\Delta V}{\Delta t} = \frac{5.33m/s}{6s} = 0.88m/s^2$$

$$F = ma = (20kg)(0.88m/s^2) = 17.8N$$

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2. Start — 20kg — Finish

$d = 0m$, $t = 0s$, $V = 4m/s$

$V_{Ave} = \frac{30m}{15s} = 2m/s$

$d = 30m$, $t = 15s$, $V = 0m/s$

$$a = \frac{\Delta V}{\Delta t} = \frac{-4m/s}{15s} = -0.27m/s^2$$

$$F = ma = 20kg(-0.27m/s^2) = -5.33N$$

Bonus:

5.33N = Force of Friction ← | → Child's Pushing Force = ?

Net Force = 17.8N

Child's Force $- 5.33N = 17.8N$

Child's Force $= 23.1N$