

【Appendix】

Table 1 Response Rate in JELS–Math

A area

	AT		PA	
	<i>N</i>	%	<i>N</i>	%
3rd	1,121	96.6	1,114	96.0
6th	1,147	95.4	1,158	96.3
9th	599	53.1	591	52.4
12th	1,426	45.1	1,428	45.1

NS area

	AT		PA	
	<i>N</i>	%	<i>N</i>	%
3rd	117	99.2	117	99.2
6th	125	98.4	123	96.9
9th	133	98.5	133	98.5
12th	102	86.4	103	87.3

C area

	AT		PA	
	<i>N</i>	%	<i>N</i>	%
3rd	924	98.8	927	99.1
6th	962	98.8	873	89.6
9th	968	94.7	967	94.6
12th	1,152	96.5	1,150	96.3

Table 2 Expected Solutions to Performance Task (6th grade)

A1 Compare using velocity (distance per hour)

Yuko: $3 \div 1 = 3$ (km/h), or $9/3$ (km/h)

Akio: $5 \div 1.5 = 3.3\cdots$ (km/h), or $10/3$ (km/h)

A2 Compare using velocity (distance per minute)

Yuko: $3000 \div 60 = 50$ (m/min)

Akio: $5000 \div 90 = 55.5\cdots$ (m/min), or $55 \frac{5}{9}$ (m/min)

B Compare using inverse velocity (minute per km)

Yuko: $60 \div 3 = 20$ (min/km)

Akio: $90 \div 5 = 18$ (min/km)

C1 Compare using distance for the same hours (3h)

Yuko: 9 km for 3 hours

Akio: 10km for 3 hours

C2 Compare using distance for the same hours (1.5h)

Yuko: 4.5 km for 1.5 hours

Akio: 5 km for 1.5 hours

D1 Compare using time for the same distance (15 km, L.C.M.)

Yuko: 5 hours for 15 km

Akio: 4.5 hours for 15 km

D2 Compare using time for the same distance (5 km)

Yuko: 1 hour and 40 minutes for 5 km (It will take the group 40 minutes more to walk the extra 2 km.)

Akio: 1 hour and 30 minutes for 5 km

E Suppose both groups walked at the same speed for 3 km

Akio: They take 30 minutes more for walking the extra 2 km.

Yuko: After walking 3 km they would take 40 minutes more to walk the extra 2 km.