Direct and Inverse Proportion Mark Scheme		
1	4 people \times 2 days = 8 days of total work	[1] Determine total amount of work
	for 2 people it would take 4 days	[1] Correct number of days
2	3 litres \div 12 students = 0.25 litres per student	[1] Find litres per student
	$20 \times 0.25 = 5$ litres	[1] Correct amount of water
3	$3 \times 6 = 18$ hours of water	[1] Establish the correct relationship
	for 6 walkers, $18 \div 6 = 3$ They have 3 hrs worth of water	[1] Correct time
4(a)	4 people \times 2 hours = 8 hours of work total	[1] Determine total amount of work
	1 hour each for 8 people	[1] Correct time
4(b)	6 builders \times 80 days = 480 work days in total	[1] Determine total amount of work
	$480 \div 16 = 30$ builders	[1] Correct number of builders required
5	speed \times time = distance 30 mph \times 0.5 hrs = 15 miles	[1] Use of relation and correct distance
	15 miles / 60 mph = 0.25 hrs = 15 mins	[1] Correct time Accept alternate methods
6	300 men × 90 days of food= 27,000 days worth of food for one person	[1] Determine total amount of food
	$300 \text{ men} \times 40 \text{ days of food} = 12,000 \text{ days worth of food}$ for one person used Amount of food left after 40 days = $27000 - 12000 =$ 15000	[1] Find first 40 days worth of food
	$15000 \text{ days of food} \div 150 \text{ men} = 100 \text{ days worth of food left}$	[1] Correct number of days left
7	12 litres per minute = 720 litres per hour 22 hrs \times 720 litres per hr = 15840 l needed	[1] Find total volume required
	5 litres per minute = 300 litres per hour 158401 ÷ 300 litres per hr = 52.8 hrs	[1] Correct new time at new flow rate.

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