

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

END