

## Reasoning and Problem Solving – Multiplication and Division – Year 5

1.  $£17 + £9 + £13 + £26 + £6 + £37 + £48 + £11 = £167$ .  $£167 \times 13 = £2,171$ . Calculation may stimulate discussion whether to add then multiply (most efficient) or multiply then add (less efficient, more chance for errors).

2.  $19 + 65 + 11 = 95$  days;  $95 \div 5 = 19$ ;  $95 + 19 = 114$ ;  $114 \times 13 = 1,482$  days.

Food	$£23 \times 1,482$	34, 086
First aid	$£7 \times 1,482$	10,374
Fuel	$£17 \times 1,482$	25,194
Insurance	$£51 \times 1,482$	75,582
Wages	$£98 \times 1,482$	145,236
Total	$£196 \times 1,482$	290, 472

3.

Equipment		Hire (cost per day)	Number of days	Hire Cost	£5 per day Insurance	Total cost
Thermometer	✓	£1,234	65	£80, 210	£325	£80,535
Soil collection pods	✓	£2,543	23	£58, 489	£115	£58,604
Chemical analysis	✓	£7,325	30	£219, 750	£150	£219,900
Richter graph	✓	£5,731	35	£200,585	£175	£200,760

4. Camp exclusion zone:  $105 \times 15 = 1,575$ , costing  $£7 \times 1,575 = £11,025$

Volcano exclusion zone:  $97 \times 94 = 9,118$ , costing  $£7 \times 9,118 = £63,826$

Laboratory exclusion zone:  $12 \times 23 = 276$ , costing  $£7 \times 276 = £1,932$

5.

Helicopter	Cost per trip	Per passenger	Tick to select option
4 seater	£1,224	9 people (13 minus 2 on rest day and 2 at the lab) would need 3 helicopters: $3 \times £1,224 = £3,672$ . $£3,672 \div 9 = £408$ per person	
8 seater	£2,943	9 people (13 minus 2 on rest day and 2 at the lab) would need 2 helicopters: $2 \times £2,943 = £5,886$ . $£5,886 \div 9 = £654$ per person	
10 seater	£3,510	9 people (13 minus 2 on rest day and 2 at the lab) would need 1 helicopters: $1 \times £3,510 = £3,510$ . $£3,510 \div 9 = £390$ per person	✓

Jeep	Cost per trip (outward and return journey)	Total Daily Cost	Price per Person	Tick to select option
4 seater	£242	11 people plus 3 seats for kit would need 4 jeeps: $4 \times £242 = £968$ .	$£986 \div 11 = £88$	
8 seater	£473	11 people plus 3 seats for kit would need 2 jeeps: $2 \times £473 = 946$	$£946 \div 11 = £86$	✓

6.  $£346 \times 13 = £4,498$  so more cost effective to use in house training.

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