

Cobb - Montford Mini-Mu 2015

Solution Key

Part 1

① $10:30 \rightarrow 12:00$ Noon = 90 min
 $12:00 \rightarrow 7:45$ = 465 min
555 min

555 min
 - 120 min (walk)
 - 40 min (lunch)
 - 45 min (dinner)
350 min

C

② 65 min
 45
 35
 64
 44
253 min

253 $\overline{) 30.000}$
 $\begin{array}{r} 118 \\ 253 \downarrow \\ 470 \\ 253 \downarrow \\ 2170 \\ 2024 \\ \hline 146 \end{array}$

$\frac{\$30.00}{253 \text{ min}} \approx \0.12

A

③ $\frac{1 \text{ tree block}}{4 \text{ tree planks}}$

$\frac{1}{4} = \frac{62.5}{250}$
 $\times 62.5$

$4 \overline{) 250.0}$
 $\begin{array}{r} 62.5 \\ 24 \downarrow \\ 10 \\ 8 \downarrow \\ 20 \\ 20 \\ \hline \end{array}$

63 whole blocks must be cut down to have 62.5 of them.

C

④ $9:25 \rightarrow 12:00$ Noon = 155 min
 $12:00 \rightarrow 12:33$ + 33
188 min

$\frac{23.6 \text{ km}}{188 \text{ min}}$

$.125 \rightarrow .13 \text{ km/min}$

$188 \overline{) 23.600}$
 $\begin{array}{r} 125 \\ 188 \downarrow \\ 480 \\ 376 \downarrow \\ 1040 \\ 940 \\ \hline 100 \end{array}$

B

⑤ $\frac{7 \text{ planks}}{2 \text{ ladders}} = \frac{245 \text{ planks}}{70 \text{ ladders}}$

$\times 35$

$\frac{35}{\times 7}$
245

C

⑥ $\frac{3 \text{ axes}}{16 \text{ hours}} = \frac{24 \text{ axes}}{128 \text{ hours}}$

$\times 8$

$16 \overline{) 128}$
 $\begin{array}{r} 8 \\ 128 \\ \hline 128 \end{array}$

C

2015 Solution Key Part 1 Continued

⑦ $7 + 5 + 6 + 5 + \boxed{} = 30$ mean of 5 blocks was 6
 $\underbrace{7 + 5 + 6 + 5}_{23} + \boxed{7} = 30$ so $6 \times 5 = 30$ B

⑧ Mon 4 $4 + 12 + 6 = 22$ B
 Tues $4 \times 3 = 12$
 Wed $\frac{1}{2}$ of 12 = 6

⑨ Chickens have 2 legs $2 \times \boxed{} + 4 \times \boxed{} = 48$
 Cows have 4 legs
 Must have the same number of chickens as cows. $2 \times \boxed{8} + 4 \times \boxed{8} = 48$ B
 $\underbrace{16 + 32}_{48} = 48$
 There were 8 cows & 8 chickens.

⑩
$$\begin{array}{r} 23.5 \\ 27.4 \overline{) 645.20} \\ \underline{548} \\ 972 \\ \underline{822} \\ 1500 \\ \underline{1370} \\ 130 \end{array}$$

Since he can only carry whole blocks, he carries 23 because 24 blocks would put him over his limit. A

⑪ Steps = 8 inches
 Jumps = 18 inches

68 feet

24 jumps

$$\begin{array}{r} 24 \\ \times 18 \\ \hline 192 \\ 24 \\ \hline 432 \end{array}$$

48 steps

$$\begin{array}{r} 48 \\ \times 8 \\ \hline 384 \end{array}$$

$$\begin{array}{r} 68 \\ 12 \overline{) 816} \\ \underline{72} \\ 96 \\ \underline{96} \\ 0 \end{array}$$

$$\begin{array}{r} 384 \\ 432 \\ \hline 816 \text{ inches} \\ 12 \text{ in} = 1 \text{ ft} \end{array}$$

A

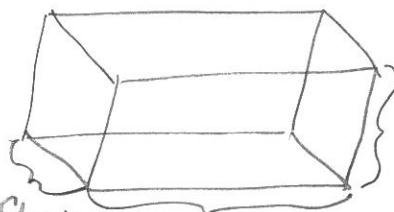
2015 Solution Key Part 1 Continued

⑫ $\frac{5}{8}$ of $\square = 105$

$$\frac{105}{1} \div \frac{5}{8} = 168$$

C

⑬



1 block = $1\frac{1}{2}$ ft. $1\frac{1}{2} = \frac{3}{2}$

3 ft = 2 blocks $\frac{3}{1} \div \frac{3}{2} = \frac{3}{1} \cdot \frac{2}{3} = \frac{2}{1} = 2$

24 ft = 16 blocks $\frac{24}{1} \div \frac{3}{2} = \frac{24}{1} \cdot \frac{2}{3} = 16$

36 ft = 24 blocks $\frac{36}{1} \div \frac{3}{2} = \frac{36}{1} \cdot \frac{2}{3} = 24$

So, $16 \times 24 \times 2 = 768$ blocks

A

⑭ $\frac{9 \text{ sheep}}{4 \text{ beds}} = \frac{162}{72 \text{ beds}}$

$$\begin{array}{r} 18 \\ 4 \overline{) 72} \\ \underline{4} \\ 32 \\ \underline{32} \\ 0 \end{array}$$

B

⑮

1 st week = 8	} 252 sheep
2 nd week = 16	
3 rd week = 32	
4 th week = 64	
5 th week = 128	
<u>252</u>	

⑯ $\frac{1 \text{ block}}{4 \text{ planks}} = \frac{5 \text{ blocks}}{20 \text{ planks}}$

$\frac{1 \text{ plank}}{4 \text{ sticks}} = \frac{20 \text{ planks}}{80 \text{ sticks}}$

80 sticks

D

⑰

1 st hour = 6 zombies
2 nd hour = $6 \times 3 = 18$
3 rd hour = $18 \times 3 = 54$
4 th hour = $54 \times 3 = 162$
5 th hour = $162 \times 3 = 486$
6 th hour = $486 \times 3 = 1458$
7 th hour = $1458 \times 3 = 4374$
8 th hour = $4374 \times 3 = 13122$

$$\begin{array}{r} 13122 \\ 4374 \\ 1458 \\ 486 \\ 162 \\ 54 \\ 18 \\ 6 \\ \hline 19680 \end{array}$$

C

⑱ $\frac{1 \text{ block}}{4 \text{ planks}} = \frac{2 \text{ blocks}}{8 \text{ planks}}$

$\frac{2 \text{ blocks}}{1 \text{ table}} = \frac{80 \text{ blocks}}{40 \text{ tables}}$

B

2015 Solution Key Part 1 Continued

19

Mon	78	} 480 min	8 hrs	A
Tues	83			
Wed	54			
Thurs	75			
Fri	80			
Sat	64			
Sun	46			

60 | 480
480

20

$$\frac{1 \text{ block}}{4 \text{ planks}} \xrightarrow{\times 2} \frac{2 \text{ blocks}}{8 \text{ planks}}$$

2 blocks = 1 table

$$\frac{2 \text{ blocks}}{1 \text{ table}} \xrightarrow{\times 36} \frac{72 \text{ blocks}}{36 \text{ tables}}$$

1 table = 36 tables

21

1st hr = 7	7	C
2nd hr = 7x2 = 14	14	
3rd hr = 14x2 = 28	28	
4th hr = 28x2 = 56	56	
5th hr = 56x2 = 112	112	
	217	

23

$$\frac{28 \text{ blocks}}{40 \text{ seconds}} \xrightarrow{\times 90} \frac{2520}{3600 \text{ sec (1 hour)}}$$

28 x 90 = 2520

C

1 hour = 60 minutes
1 minute = 60 seconds so, 60 x 60 = 3600 sec in 1 hr.

24

$$\frac{1 \text{ block}}{4 \text{ seconds}} \xrightarrow{\times 90} \frac{90 \text{ blocks}}{360 \text{ seconds}}$$

$$\frac{1 \text{ min}}{60 \text{ sec}} \xrightarrow{\times 6} \frac{6 \text{ min}}{360 \text{ sec}}$$

A

22

1 block = 4 planks
1 plank = 4 sticks

1 axe = 4 planks

B

1 axe = 4 planks

1 axe = 4 planks

1 axe = 4 planks

1 axe = 4 planks

1 axe = 4 planks

1 axe = 4 planks

left over 4 planks = 4 planks

9 axes with 2 sticks left

25

$$\frac{1 \text{ block}}{4 \text{ planks}} \xrightarrow{\times 15} \frac{15 \text{ blocks}}{60 \text{ planks}}$$

$$\frac{1 \text{ door}}{6 \text{ planks}} \xrightarrow{\times 10} \frac{10 \text{ doors}}{60 \text{ planks}}$$

A