

Mark scheme – Word problems

Q1.

1,000

Q2.

An explanation and/or examples that shows that the statement is ‘sometimes’ true, e.g.:

- ‘If both numbers are even / divisible by two they can be simplified by dividing both numerator and denominator by 2. This would not work for odd number fractions that are factors of the same number, e.g., $\frac{3}{15}$ can be simplified to $\frac{1}{5}$ but dividing the numerator and denominator by 5.’
- ‘Fractions such as $\frac{2}{4}$ and $\frac{2}{6}$ can be simplified by dividing both numerator and denominator by 2 because both digits are even. Fractions such as $\frac{3}{6}$ and $\frac{7}{21}$ cannot as they include odd numbers. They can be simplified by dividing by a different common factor e.g., 3 for $\frac{3}{6}$ and 7 for $\frac{7}{21}$. Hence the statement is ‘sometimes’ true.’
- ‘ $\frac{2}{4}$ and $\frac{2}{8}$ can be simplified by dividing by 2.
 $\frac{3}{6}$ and $\frac{6}{15}$ can also be simplified but by using a different common factor, i.e., 3.
Hence the statement is sometimes true.’

Q3.

5 (hours) 25 (minutes)

Q4.

Number of weeks	Number of days
1	7
2	14
4	28
6	42
10	70
15	105

Q5.

5

Q6.

(a) 5:50, (0)5:50 pm OR 17:50

(b) 1 (hours) 45 (minutes)

Q7.

1,408

Q8.

24

Q9.

101

Q10.

- (a) 57 min 15 sec
- (b) 44 min 40 sec

Q11.

Award TWO marks for three boxes completed correctly as shown:

60 months = years

72 hours = days

84 days = weeks

If the answer is incorrect, award ONE mark for two boxes completed correctly.

Q12.

- (a) 140
- (b) 2

Q13.

The correct time circled as shown:

Leaves London	Arrives Paris
12:01	15:22
12:25	15:56
13:31	16:53
14:01	17:26
14:31	17:53
15:31	18:53
16:01	19:20

Q14.

5

Q15.

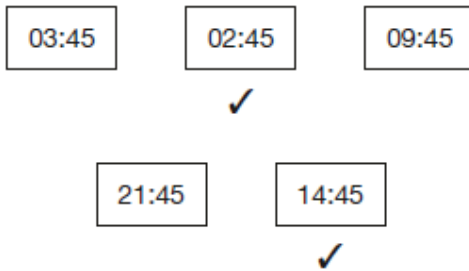
An explanation that shows Adam has four times as many balloons as Chen, e.g.

- 24×6 is 4 times as many as 12×3
- 144 is four times 36
- $144 \div 4 = 36$
- $144 \div 36 = 4$
- $36 \times 4 = 144$
- Adam buys twice as many bags of twice as many balloons, so it's doubled twice
- 24 is double 12 and 6 is double 3, so it's doubled twice
- Chen buys half the amount of bags and each bag has half the number of

balloons, so he has $\frac{1}{4}$ of the amount.

Q16.

Both clocks ticked, as shown:



Q17.

- (a) 46
- (b) 10:44

Q18.

7 hours and 24 minutes

Q19.

7 minutes to 9 OR 8:53

Q20.

- (a) 35
- (b) 4:15

Q21.

- (a) 38
- (b) 10:21
- (c) 10:58

Q22.

13
11:10

Q23.

- (a) 109
- (b) An explanation that recognises that 100 people get up before 9am which is two-thirds of the total (150).
 - '13 + 28 + 59 = 100 which is two-thirds of the total'
 - ' $\frac{1}{3}$ of 150 = 50 and $2 \times 50 = 100$ '
 - ' $\frac{2}{3}$ of 150 is 100'
 - '36 + 14 = 50 which is one-third after 9am'
 - Do not accept vague or incomplete explanations, eg:
 - 'One-third are 9 o'clock or later'
 - '100 got up at 9am'
 - 'Twice as many got up before 9am.'
 - '13 + 28 + 59 = 100'

Q24.

11 OR 12 OR any value between 11.5 and 11.6 inclusive

or

Any value between 277 and 288 inclusive seen (value takes account of seconds in a minute and minutes in an hour)

OR

Any value between 694 and 695 inclusive seen (value takes account of hours in a day and either seconds in a minute or minutes in an hour)

OR

Shows or implies a complete, correct method, eg:

- $1\ 000\ 000 \div 60 \div 60 \div 24$
- $1\ 000\ 000 \div 86\ 400$
- $16\ 666 \div 60 \div 24$

Do not accept place value errors in the value taken for one million in an otherwise correct method, eg:

$$100\ 000 \div 60 \div 60 \div 24$$

Q25.

(a) 8 hours

(b) 1 hour 30 minutes

Q26.

D B C A

Q27.

23:10

ten to 7 in the morning

Q28.

January, March, May, July, August, October, December, all ticked.

Q29.

Yellow

Red

Q30.

365 and 366

Q31.

22 seconds

Q32.

15:10

Q33.

- (a) 14.83 Accept Sam.
- (b) Sue Accept 15.97 secs OR 15.97.
- (c) Bar line drawn to anywhere between 200 and 225, EXCLUSIVE
(ie bar must not end on 200 or 225 lines).
- (d) Answer in the range 55 to 65 INCLUSIVE.

Q34.

8 (hours) 18 (minutes)