

Answers

Numeracy: Exercise 1

1	$\frac{29}{35}$
2	$\frac{7}{6}$
3	$\frac{1}{12}$
4	$\frac{19}{9}$
5	$\frac{103}{60}$
6	$\frac{311}{280}$
7	$\frac{9}{28}$
8	$\frac{17}{21}$
9	$\frac{29}{12}$
10	$\frac{13}{18}$
AQ	$\frac{13}{35}$

Numeracy: Exercise 2

1	$\frac{11}{50}$, 0.22
2	$\frac{2}{25}$, 8%
3	15%, 0.15
4	$\frac{11}{20}$, 0.55
5	$\frac{7}{10}$, 70%
6	$\frac{4}{5}$, 0.8, 80%
7	$\frac{1}{8}$, 0.125
8	$\frac{27}{40}$, 67.5%
9	0.625, 62.5%
10	0.86, 85.71%
AQ	1. 83.38%, $\frac{5}{6}$, 0.832, 0.83 2. No; $\frac{9}{16} < \frac{10}{16}$

Numeracy: Exercise 3

1	36%
2	27%
3	12.3%
4	22.7%
5	8.9%
6	45.3%
7	20.8%
8	13.0%
9	53.0%
10	42%
AQ	1. 57.9% 2. 6.0%

Numeracy: Exercise 4

1	£434.55
2	£1968.52
3	23.8km
4	303.92 litres
5	£6267.38
6	175.59mg
7	489.41ml
8	£312393.16
9	619 pupils
10	£433.26
AQ	1. £678 2. £41000

Numeracy: Exercise 5

1	$\frac{1}{26}$
2	$\frac{1}{3}$
3	$\frac{5}{12}$
4	$\frac{6}{37}$
5	$\frac{15}{36}$
6	$\frac{4}{9}$
7	$\frac{7}{16}$
8	$\frac{6}{25}$
9	$\frac{6}{25}$
10	$\frac{8}{25}$
AQ	1. $\frac{1}{6}$ 2. Dice $\frac{35}{60} > \frac{33}{60}$

Numeracy: Exercise 6

1	6.4 \approx 6 wins
2	2.4 \approx 2 workers
3	8.37 \approx 8 snow days
4	12.92 \approx 13 flights
5	481.6 \approx 482 pupils
6	28.8 \approx 29 eggs
7	7.2 \approx 7 customers
8	18.75 \approx 19 pupils
9	28.57 \approx 29 pupils
10	7.56 \approx 8 parcels
AQ	More as 6 > 5.037

Numeracy: Exercise 7

1	£13.60
2	689 words
3	35.2 mins (35 min 12 secs)
4	£57
5	22.5 square metres
6	No, should be £3.40
7	36km
8	£15.40
9	480 grams
10	Morrisons (34p/100g is better than 36p/100g)
AQ	£11583

Numeracy: Exercise 8

1	6 hours
2	14 days
3	2 hours 30 mins
4	18 days
5	24 days
6	12 games
7	4 hours 12 mins
8	40 mins
9	8.4 \approx 9 workers
10	4 hours 30 mins
AQ	20 days, so 9 th November

Numeracy: Exercise 9

1	16:40, Total 56
2	80:112, Total 192
3	174:L29, Total 203
4	54:27:81, Total 162
5	60:30:135, Total 225
6	54:30:12, Total 96
7	23:69:92, Total 184
8	60:132:48, Total 240
9	104:56:80, Total 240
10	336:294:210, Total 840
AQ	65:40:45, Total 150

Numeracy: Exercise 10

1	35
2	78
3	175
4	4.8
5	60
6	4.5
7	74
8	13.3
9	80
10	11.6
AQ	$2.7 - 1.5 = 1.2$ bar

G & M: Exercise 1

1	Upper 25.6cm, Lower 25.2cm
2	Upper 3.65m, Lower 3.55m
3	Upper 13.4cm, Lower 12.8cm
4	Upper 19kg, Lower 16.4kg
5	Upper 37.2°C, Lower 36.4°C
6	Upper 390mm, Lower 356mm
7	Upper 3.52cm, Lower 2.88cm
8	Upper 525g, Lower 475 g
9	Upper 21.56cm, Lower 17.64cm
10	Upper 721mm, Lower 679mm
AQ	Upper 4.41g, Lower 3.99g, 30% Rejected

G & M: Exercise 2

1	416 or 408
2	540 or 570
3	176 or 168
4	440 or 455
5	400 or 455
6	144 or 108
7	144 or 135
8	120 or 128
9	648 or 720 or 720
10	352 or 330 or 320
AQ	200 or 175

G & M: Exercise 3

1	$A = 50.24\text{cm}^2, C = 25.12\text{cm}$
2	$A = 113.04\text{cm}^2, C = 37.68\text{cm}$
3	$A = 226.87\text{cm}^2, C = 53.38\text{cm}$
4	$A = 226.87\text{cm}^2, C = 53.38\text{cm}$
5	$A = 63.59\text{cm}^2, r = 4.5\text{cm}, d = 9\text{cm}$
6	$C = 62.8\text{cm}, r = 10\text{cm}, d = 20\text{cm}$
7	$A = 16.08\text{cm}^2, P = 16.45\text{cm}$
8	$A = 45.78\text{cm}^2, P = 27.76\text{cm}$
9	$A = 10.75\text{cm}^2, P = 13.21\text{cm}$
10	$A = 51.50\text{cm}^2, P = 28.92\text{cm}$
AQ	Pythagoras gives 12cm $A = 152.52\text{cm}^2, P = 54.84\text{cm}$

G & M: Exercise 4

1	$d = 8\text{cm}, V = 351.68\text{cm}^3$
2	$d = 12\text{cm}, V = 489.84\text{cm}^3$
3	$d = 7\text{cm}, V = 179.50\text{cm}^3$
4	$r = 9.3\text{cm}, V = 1357.89\text{cm}^3$
5	$r = 6.7\text{cm}, V = 563.82\text{cm}^3$
6	$r = 5.6\text{cm}, V = 735.25\text{cm}^3$
7	$d = 12.6\text{cm}, V = 203.56\text{cm}^3$
8	$d = 10.2\text{cm}, V = 277.68\text{cm}^3$
9	$r = 7.85\text{cm}, 1012.62\text{cm}^3$
10	$r = 3.55\text{cm}, V 344.28\text{cm}^3$
AQ	$V = 552.64\text{cm}^3$

G & M: Exercise 5

1	9.49cm
2	13.27cm
3	12.85cm
4	13.42cm
5	22.36cm
6	20.20cm
7	4.79cm
8	28.36cm
9	3.29cm
10	0.97cm
AQ	$x = 8.78\text{cm}, P = 24.36, \text{Total} = 730.8\text{cm}/7.31\text{m}$

G & M: Exercise 6

1	$\frac{6}{11}$
2	$\frac{1}{24}$
3	$\frac{4}{9}$
4	$\frac{9}{47}$
5	$\frac{37}{12}$
6	$\frac{7}{34}$
7	$\frac{3}{50}$
8	$\frac{97}{30}$
9	$\frac{41}{28}$
10	2
AQ	Ramp is not safe as $0.1875 > 0.187$

G & M: Exercise 7

1	1845/6.45pm
2	0917/9.17am
3	0641/6.41am
4	1327/1.27pm
5	0603/6.03am (next day)
6	2355/11.55pm
7	1200/12pm
8	0725/7.25am
9	1115/11.15am
10	0113/1.13am
AQ	2 hours 5 minutes

G & M: Exercise 8

1	4 hours
2	186 miles
3	7 m/s
4	2 hours 30 minutes
5	1512 km
6	12.5 km/h
7	5 hours 20 minutes
8	462 metres
9	3.75 m/sec or 225 m/min
10	3 hours 33 minutes
AQ	4 hours 27 minutes layover

G & M: Exercise 9

1	See appendix
2	See appendix
3	See appendix
4	See appendix
5	See appendix
6	See appendix
7	See appendix
8	See appendix
9	See appendix
10	See appendix
AQ	See appendix. Not valid as it will take 25 hours.

G & M: Exercise 10

1	5cm by 3cm
2	5cm by 3cm
3	7cm by 2cm
4	8cm by 5cm
5	4cm-1cm-1.5cm-5cm-8cm-5cm-2.5cm
6	10cm-5cm-6cm-6cm-4cm-11cm
7	See sketch
8	See sketch
9	See sketch
10	See sketch
AQ	Ships are 9cm/90km apart