

$$\begin{array}{r}
 1 \text{ (a)} \quad 3069 \\
 + 485 \\
 \hline
 3554 \\
 \hline
 \end{array}
 \quad \text{or} \quad
 \begin{array}{l}
 3069 + 500 = 3569 \\
 3569 - 15 = \underline{3554}
 \end{array}$$

$$\begin{array}{r}
 \text{(b)} \quad \cancel{2005} \\
 - 286 \\
 \hline
 1719 \\
 \hline
 \end{array}
 \quad \text{or} \quad
 \begin{array}{l}
 2005 - 300 = 1705 \\
 1705 + 14 = \underline{1719}
 \end{array}$$

$$\begin{array}{r}
 2 \text{ (a)} \quad 57 \\
 \times 7 \\
 \hline
 399 \\
 \hline
 \end{array}$$

(b) We already calculated  $57 \times 7$ .  
 $57 \times 70$  is just  $10 \times$  greater  
 So  $399 \times 10 = \underline{3990}$

$$\begin{array}{r}
 \text{Or} \quad 57 \\
 \times 70 \\
 \hline
 3990 \\
 \hline
 \end{array}$$

(c) We already calculated  $57 \times 7$  and  $57 \times 70$ .  
 $57 \times 77$  is just the sum of both these values

$$\begin{array}{r}
 3990 \\
 + 399 \\
 \hline
 4389 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 0r \quad 57 \\
 \times 77 \\
 \hline
 399 \\
 + 3990 \\
 \hline
 4389 \\
 \hline
 \end{array}$$

3 (a) Line up the decimal points correctly!

$$\begin{array}{r}
 17.80 \\
 - 11.59 \\
 \hline
 5.41
 \end{array}$$

£5.41

(b)  $5.856 \div 8 = \underline{0.732}$

$$\begin{array}{r}
 \underline{0.732} \\
 8 \overline{) 5.856} \\
 \underline{- 5.6} \downarrow \\
 \quad .25 \\
 \underline{- .24} \downarrow \\
 \quad \quad 16 \\
 \underline{- 16} \\
 \quad \quad \quad 0
 \end{array}$$

$$(c) \quad 13.5 \times 0.25 = 3.375$$

Ignore the decimal point and multiply.

$$\begin{array}{r} 135 \\ \times 25 \\ \hline 675 \\ + 2700 \\ \hline 3375 \end{array}$$

3 digits after decimal point in question, so add decimal point in the answer after 3 digits from the right.

4 (a) Change blanks to ?

$$480 \div ? = 4.8$$

multiply both sides by ?

$$480 = 4.8 \times ?$$

divide both sides by 4.8

$$\underline{100} = ?$$

or Decimal moves 2 places to the left so must be 100

(b) 'Of' means multiply

$$\frac{2}{3} \times ? = 16$$

multiply both sides by 3

$$2 \times ? = 48$$

divide both sides by 2

$$? = \underline{24}$$

$$(c) \quad 5 - 3\frac{2}{7} = ?$$

Convert to mixed numbers

$$3\frac{2}{7} = \frac{23}{7}$$

same

$$\frac{35}{7} - \frac{23}{7} = \frac{12}{7} \text{ or } 1\frac{5}{7}$$

$$5 = \frac{35}{7} \quad \text{denominator}$$

$$(d) \quad 25 \times ? = 375$$

$$? = 15$$

Divide both sides by 25

$$\begin{array}{r} 15 \\ 25 \overline{) 375} \\ \underline{-25} \phantom{0} \\ 125 \\ \underline{-125} \\ 0 \end{array}$$

5 (a) 7 days in 1 week so 217 days = 31 weeks

$$\begin{array}{r} 31 \\ 7 \overline{) 217} \\ \underline{-21} \phantom{0} \\ 07 \\ \underline{-7} \\ 0 \end{array}$$

$$(b) \quad 1 \text{ L} = 1000 \text{ ml}$$

$$3.22 \times 1000 = 3220 \text{ ml}$$

$$(c) \quad 1 \text{ m} = 100 \text{ cm}$$

$$4.36 \times 100 = 436 \text{ cm}$$

$$(d) \quad 1000 \text{ m} = 1 \text{ km}$$

$$2060 \div 1000 = 2.06 \text{ km}$$

6 (a)  $9 \div 100 = 0.09$

(b) Convert the fraction to get 100 as denominator

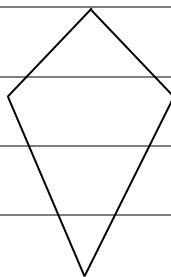
$$\frac{1}{20} = \frac{5}{100}$$

$$5 \div 100 = 0.05$$

(c) Cannot get 100 as denominator so we need to use long division.

$$\begin{array}{r} 0.375 \\ \hline 8 \overline{) 3.000} \\ \underline{-2.4} \phantom{0} \\ 60 \\ \underline{-56} \\ 40 \end{array}$$

7



parallelogram

Kite

Rectangle

8

(a)

$$\begin{array}{cccccc} 7 & 11 & 15 & 19 & 23 & 27 \\ \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \\ +4 & +4 & +4 & +4 & +4 & \end{array}$$

(b) 36 25 16 9 4 1

These are square numbers going backwards

9 Convert all times to minutes. 60 mins = 1 hour

School to station:	15 mins	} Add all times
Train Journey:	83 mins	
Station to Stadium:	12 mins	
Delays:	25 mins	
	<u>135</u>	

135 mins = 2 hours 15 mins  
2h 15 before 9:30 is 7:15

10 

60%	75%	$\frac{3}{4}$	40%	0.4	1%	$\frac{1}{100}$	50%	$\frac{1}{2}$	20%	$\frac{1}{5}$	10%	$\frac{1}{10}$	0.3	$\frac{3}{10}$	0.55	55%	$\frac{7}{10}$
-----	-----	---------------	-----	-----	----	-----------------	-----	---------------	-----	---------------	-----	----------------	-----	----------------	------	-----	----------------

60% and  $\frac{7}{10}$  do not have equivalents.

11 Factors of 180:

	$1 \times 180$	$6 \times 30$
primes →	$2 \times 90$	$9 \times 20$
↘	$3 \times 60$	$10 \times 18$
	$4 \times 45$	$12 \times 15$
	$5 \times 36$	

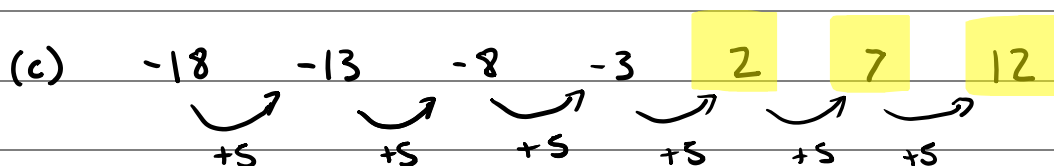
2, 3, (any 3 others)

12 Any 2 numbers divisible by 180 e.g. 360, 720

$$\begin{array}{r}
 13 \quad (a) \quad 197 \\
 - 28 \\
 \hline
 89 \\
 \hline
 \end{array}$$

(b) 2 negatives make a positive  
 So  $13 - -18$  is the same as  $13 + 18$

$$\begin{array}{r}
 13 \\
 + 18 \\
 \hline
 31 \\
 \hline
 \end{array}$$



(d) Downwards = subtract  
 Upwards = Add

$$-20 - 5 + 8 = -17$$

$$(e) \quad -2 + 6 \times -3 - -7$$

$$-2 + -18 - -7$$

$$-2 - 18 - -7$$

$$-2 - 18 + 7$$

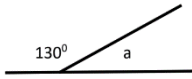
$$= -13$$

Multiply first

$+ -$  is same as  $-$

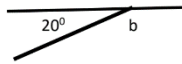
$- -$  is same as  $+$

14

Angles on straight line =  $180^\circ$ 

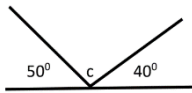
$$a = 180 - 130$$

$$a = 50^\circ$$



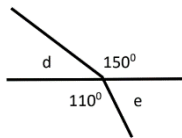
$$b = 180 - 20$$

$$b = 160^\circ$$



$$c = 180 - 50 - 40$$

$$c = 90^\circ$$



$$d = 180 - 150$$

$$d = 30^\circ$$

Angles around a point =  $360^\circ$ 

$$e = 360 - 30 - 150 - 110$$

$$= 70^\circ$$

15 (a) Youngest: Louise

(b) Range = Largest - Smallest

$$= 41 - 34$$

$$= 7 \text{ kg}$$

(c) Order of height:

1.38 1.40 1.41 1.44 1.47 1.50

Gillian Louise Fatima



(d) 3 children are older than Gillian.

(e) Louise: 9 years 8 months

Jeanie: 10 years 7 months

12 months in 1 year

So 4 months until Louise is 10

Then a further 7 months until Jeanie's age now

$$4 + 7 = 11 \text{ months}$$

(f) 37

41

35

38

34

+ 39

224

3

(g) Lucy: Age: 10 years 2 month + 1 month

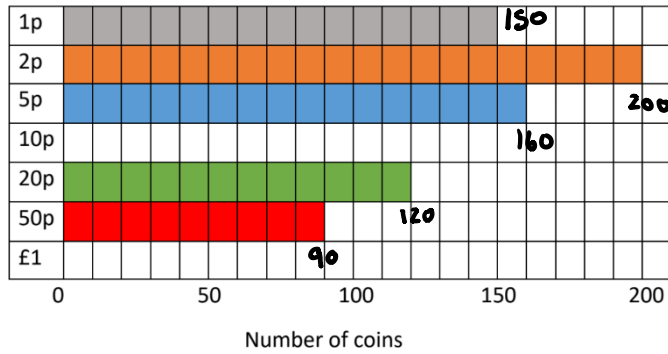
= 10 years 3 months 10:03

Height:  $1.47 + 0.04 = 1.51$  m

Mass:  $41 - 3 = 38$  kg

Hand Area:  $84$  cm<sup>2</sup>

16 (a)



From bar chart, 190 2p coins collected

$$190 \times 2 = 380p = \pounds 3.80$$

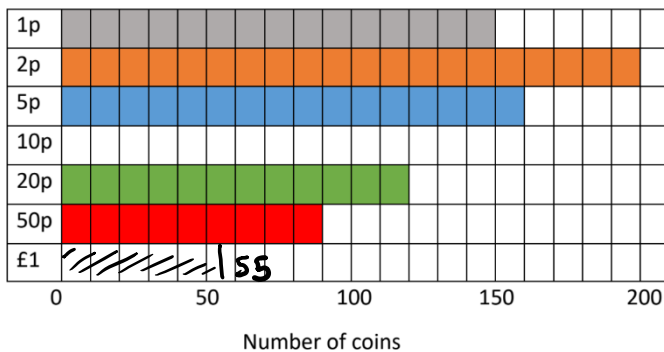
(a) 150 1p coins and 160 5p coins

$$\begin{array}{r} 160 \\ \times 5 \\ \hline 800p \end{array} \leftarrow 5p \text{ coins}$$

$$800 + 150 = 950p = \pounds 9.50$$

(b) 90 50p coins

(c)



(d) Total = £156.50

1p coins:  $150 \times 1 = 150p = \pounds 1.50$

2p coins:  $190 \times 2 = 380p = \pounds 3.80$

5p coins:  $160 \times 5 = 800p = \pounds 8.00$

20p coins:  $120 \times 20 = 2400 = \pounds 24.00$

50p coins:  $90 \times 50 = 4500 = \pounds 45.00$

£1 coins:  $55 \times 1 = \pounds 55.00 +$

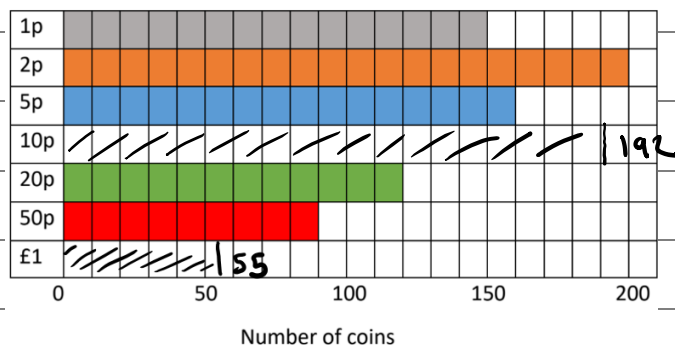
137.30  
21

(e)  $186.50$

- 137.30

19.20 pounds or 1920p

(f)  $1920 \div 10 = 192$  10p coins



# PUZZLES

1	A	A	C	B	10	A	B	C	D	E	2	2	1	5	10
	B	E	B	D	17	2	5	1	4	3	5	3	5	4	17
	E	E	C	D	11						3	3	1	4	11
	B	D	A	C	12						5	4	2	1	12
					15	12	9	14							

2	D	A	D	B	8	A	B	C	D	E	2	1	2	3	8
	C	C	A	B	12	1	3	4	2	5	4	4	1	3	12
	E	D	C	A	12						5	2	4	1	12
	A	E	B	C	13						1	5	3	4	13
					12	12	10	11							

3	E	D	C	A	11	A	B	C	D	E	3	5	1	2	11
	E	C	B	A	10	2	4	1	5	3	3	1	4	2	10
	D	A	C	E	11						5	2	1	3	11
	C	A	B	D	12						1	2	4	5	12
					12	10	10	12							

4	B	B	D	C	15	A	B	C	D	E	4	4	5	2	15
	D	D	A	C	13	1	4	2	5	3	5	5	1	2	13
	E	A	C	E	9						3	1	2	3	9
	E	C	B	D	14						3	2	4	5	14
					15	12	12	12							

The Happy family — Mr Happy, Mrs Happy, Marc, Jenny and Grandma Happy — were sitting at their round kitchen table, having dinner.

- Mrs Happy did not sit next to her husband.
- Jenny sat next to her father.
- Last night Jenny sat next to her brother and they had a fight.
- Marc did not like the vegetable soup and did not feel too happy, as his mother was sitting next to him and made him eat it.
- Grandma Happy sat next to her son and her grandson.
- Jenny loved the cake Grandma made.

Draw a diagram of the Happy family's seating arrangement.

