

UK Answers

Pink



- Various combinations of:
 $6 \rightarrow 5+1, 3+3, 4+2$
 $7 \rightarrow 6+1, 5+2, 4+3$
 $10 \rightarrow 6+4, 5+5, 4+6$
- $12 \rightarrow 24$ $5 \rightarrow 10$
 $9 \rightarrow 18$ $7 \rightarrow 14$
 $18 \rightarrow 36$ $11 \rightarrow 22$
 $8 \rightarrow 16$ $3 \rightarrow 6$
 $20 \rightarrow 40$ $6 \rightarrow 12$
- Teacher to assess drawings
- Pairs based on the following:
 $1 + 19$ $3 + 17$
 $5 + 15$ $7 + 13$
 $9 + 11$
- Many solutions possible
Examples include:
 $20 - 15$ $12 - 7$
 $10 - 5$ $8 - 3$
 $7 - 2$ $35 - 30$
- Top left grid Rule = +1
[7, 9, 10, 11]
Top right grid Rule = +2
[22, 24, 25, 28]
Bottom left grid Rule = +3
[13, 15, 16, 17]
Bottom right Rule = -2
[8, 18, 38, 48]
- Many solutions possible
Examples include:
 $55 \rightarrow 61 - 6, 49 + 6$
 $15 \rightarrow 23 - 8, 7 + 8$
 $35 \rightarrow 44 - 9, 26 + 9$
 $25 \rightarrow 32 - 7, 18 + 7$
 $5 \rightarrow 11 - 6, 2 + 3$
 $50 \rightarrow 62 - 12, 38 + 12$

Maths Challenge Cards

- Many solutions possible
Teacher to assess drawings
- Many solutions possible
Teacher to assess diagrams
- Many solutions possible
Examples include:
 $\pounds 2 + 50\text{p} + 20\text{p} + 5\text{p}$
 $(2 \times \pounds 1) + (3 \times 20\text{p}) + 10\text{p} + 5\text{p}$
 $(5 \times 50\text{p}) + (5 \times 5\text{p})$
- Many solutions possible
Examples include:
 $16 \rightarrow 12 + 4, 9 + 7$
 $16 \rightarrow 2 + 8 + 6, 5 + 7 + 4$
 $16 \rightarrow 20 - 8 + 4$
 $16 \rightarrow 24 - 8$
 $16 \rightarrow 10 + 6$
 $16 \rightarrow 30 - 15 + 4 - 3$
 $16 \rightarrow 11 + 5, 20 - 4$
 $16 \rightarrow 8 + 8$
- Many solutions possible
Teacher to assess drawings
- Various solutions possible:
Jane 10 + Will 40 [Will +30]
Jane 11 + Will 39 [Will +28]
Jane 12 + Will 38 [Will +26]
Jane 13 + Will 37 [Will +24]
Jane 14 + Will 36 [Will +22]
Jane 15 + Will 35 [Will +20]
Jane 16 + Will 34 [Will +18]
Jane 17 + Will 33 [Will +16]
Jane 18 + Will 32 [Will +14]
Jane 19 + Will 31 [Will +12]
Jane 20 + Will 30 [Will +10]
- Five solutions: 2×10 's, 4×5 's,
 5×4 's, 10×2 's, 20×1 's



15. Many solutions possible
Teacher to assess drawings

16. Four 'single' solutions
 $£6 + £3 + £1$
 $£7 + £3$
 $£5 + £3 + £2$
 $£7 + £2 + £1$

If 'doubling up' on items, then many combinations possible

3 boxes = £9, with £1 change which would be an eraser

17. a) 29, 35 [uses +6]
 b) 24, 29 [uses +5]
 c) 41, 49 [uses +8]
 d) 57, 68 [uses +11]
 e) 37, 46 [uses +9]

18. Many solutions possible
Teacher to assess diagrams

19. Many solutions possible
Teacher to assess drawings

20. Pair combinations = 100
 $10 + 90$ $25 + 75$
 $35 + 65$ $12 + 88$
 $95 + 5$ $51 + 49$
 $20 + 80$ $2 + 98$
 $60 + 40$ $89 + 11$

21. Many solutions possible
Teacher to assess grids

22. Each level to contain 6 cars
Teacher to assess diagrams

23. 11 → d j l
 12 → b f n
 13 → c g i
 14 → a h o
 15 → e k m

24. Many solutions possible
Teacher to assess work

25. Many solutions possible
Examples include:
 $£1 + £1$
 $£1 + 50p + 50p$
 $£1 + 50p + (2 \times 20p) + 10p$
 $(2 \times 50p) + (4 \times 20p) + (2 \times 10p)$

26. Path C gives 10
 Path E gives 13
 Path B gives 15
 Path D gives 12
 Path C is the lowest

27. Many solutions possible
Teacher to assess work
Least rolls to make 20 = 4 rolls

28. Odd numbers:
 39, 15, 11, 17, 33, 7, 43
 Even numbers:
 10, 50, 52, 100, 16, 2, 26, 34

29. Many solutions possible
Teacher to assess work

30. Many solutions possible
Teacher to assess drawings
Answer: Quarters

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31. Various solutions possible:

Jenna 6

$$\rightarrow (3 + 3) (2 + 4) (1 + 5)$$

Erin 1

$$\rightarrow (2 - 1) (5 - 4) (3 - 2)$$

or $(4 - 3)$

Stephen 0

$$\rightarrow (3 - 3)$$

Mark 7

$$\rightarrow (10 - 3) \text{ or } (3 + 4)$$

32. Pair combinations = 20

$$1 + 19 \quad 20 + 0$$

$$2 + 18 \quad 16 + 4$$

$$10 + 10 \quad 13 + 7$$

$$17 + 3 \quad 12 + 8$$

$$14 + 6 \quad 15 + 5$$

$$11 + 9$$

33. Teacher to assess graphs

34. Sixteen solutions possible:

14, 24, 34, 54, 64, 74, 84, 94

41, 42, 43, 45, 46, 47, 48, 49

35. List of 'halves'

3 8

4 5

10 25

9 20

2 50

36. Teacher to assess drawings
and constructions

37. Two combinations:

5 bikes + 1 tricycle

2 bikes + 3 tricycles

38. Many solutions possible
Teachers to assess orders

39. Many solutions possible
Teacher to assess diagrams

40. $6 \rightarrow 1 + 2 + 3$
 $12 \rightarrow 3 + 4 + 5$
 $33 \rightarrow 10 + 11 + 12$
 $21 \rightarrow 6 + 7 + 8$
 $24 \rightarrow 7 + 8 + 9$
 $63 \rightarrow 20 + 21 + 22$

41. Many solutions possible
Teacher to assess lines

42. Sandwich order, top down:
Bread
Pickle
Cheese
Lettuce
Meat
Tomato
Bread

43. Many solutions possible
Teacher to assess work

44. Column 1
Numbers go up +1
Column 2
All answers = 9
Column 3
All answers end with an 8

45. Many solutions possible
Teacher to assess work

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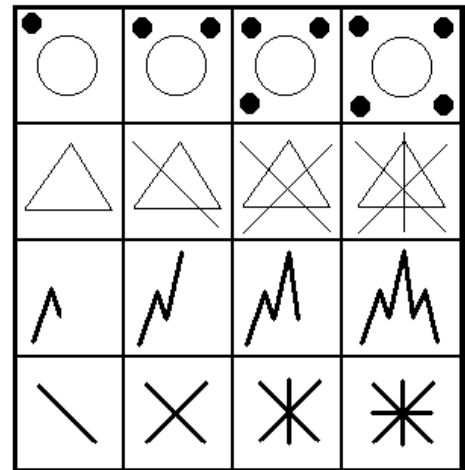


46. Many solutions possible
Example codes:
CBA 123
BAC 321
ABC 231
CAB 132
47. Answers as per layout:
 $13 + 5 = \underline{18}$ $\underline{18} - \underline{11} = 7$
 $\underline{12} - 3 = \underline{9}$ $\underline{11} - 5 = 6$
 $1 + 11 = \underline{12}$ $\underline{11} + \underline{5} = 16$
 $\underline{20} - \underline{5} = 15$ $10 + 12 = \underline{22}$
48. Many solutions possible
Teacher to assess drawings
49. Two main solutions possible
4 pieces using 4 x “_ cuts”
8 pieces using 4 x “whole cuts”
Teacher to assess drawings
50. Mice locations:
C9, I8, E7, B6, F4, H1
Teacher to assess work
51. Many solutions possible
Teacher to assess tables
52. September $\rightarrow 3 \times 5 + 6 \times 1 = \text{£}21$
December $\rightarrow 3 \times 5 + 5 \times 1 = \text{£}20$
November $\rightarrow 3 \times 5 + 5 \times 1 = \text{£}20$
February $\rightarrow 3 \times 5 + 5 \times 1 = \text{£}20$
October $\rightarrow 3 \times 5 + 4 \times 1 = \text{£}19$
January $\rightarrow 3 \times 5 + 4 \times 1 = \text{£}19$
August $\rightarrow 3 \times 5 + 3 \times 1 = \text{£}18$
April $\rightarrow 2 \times 5 + 3 \times 1 = \text{£}13$
June $\rightarrow 2 \times 5 + 2 \times 1 = \text{£}12$
March $\rightarrow 1 \times 5 + 4 \times 1 = \text{£}9$
July $\rightarrow 1 \times 5 + 3 \times 1 = \text{£}8$
May $\rightarrow 1 \times 5 + 2 \times 1 = \text{£}7$

Maths Challenge Cards

53. Question a) 11
Question b) 25
54. 24 solutions possible
Teacher to check drawings
55. $22 - 5 = 17$ cherries left
 $22 - 10 = 12$ cherries left
Half of 22 = 11 cherries
 $22 - 4 = 18$ cherries eaten
 $22 \times 2 = 44$ cherries
56. 3 dogs = 12 legs
8 birds = 16 legs
7 elephants = 28 legs
4 snakes = 0 legs
5 lions = 20 legs
1 ost. + 2 croc. = 10 legs
cat + dog + canary = 10 legs

57.



58. 1) $10p + 15p = 25p$
2) $2 \times 5p = 10p$
3) $3 \times 15p = 45p$
4) $10p + 5p + 15p + 20p = 50p$
5) $(2 \times 10p) + 20p = 40p$

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59. a) 9, 19, 48, 49, 91
b) 12, 25, 29, 52, 92
c) 8, 18, 80, 81, 108
d) 5, 10, 50, 100, 105
e) 7, 17, 47, 74, 114
f) 13, 30, 31, 103, 120
60. Many solutions possible
Teacher to assess drawings
61. $24 = 12 + 12$ $10 = 5 + 5$
 $14 = 7 + 7$ $4 = 2 + 2$
 $12 = 6 + 6$ $20 = 10 + 10$
 $2 = 1 + 1$ $16 = 8 + 8$
 $30 = 15 + 15$ $28 = 14 + 14$
 $18 = 9 + 9$ $42 = 21 + 21$
62. Many solutions possible
Examples include:
 $100 \rightarrow 40 + 50 + 10$
 $100 \rightarrow 25 + 25 + 25 + 25$
 $100 \rightarrow 2 \times 50$ or 10×10
 $100 \rightarrow 30 + 70$
 $100 \rightarrow 99 + 1$
 $100 \rightarrow 132 - 32$
 $100 \rightarrow 35 + 65$
 $100 \rightarrow 150 - 15 - 35$
63. x1 triangles = 9
x4 triangles = 3
x9 triangles = 1
Answer = 13
64. 1) 3 hours
2) 3.30 pm
3) 2.30 pm
4) 5 o'clock
5) 8 o'clock
65. Many solutions possible
Teacher to assess work

Maths Challenge Cards

66. When you add together the 3 digits in each row, column and diagonal, it makes 15.
67. 1) Thursday
2) 31 days
3) 4 Saturdays
4) Friday
5) Answers will vary
68. The reversed numbers add together to make two digit numbers which use the same digit.
88, 33, 55, 55
44, 66, 99, 88

69.

6	4	3	2
5	6	3	4
5	4	4	4
8	3	1	7

70. Teacher to assess tables

	<u>M</u>	<u>S</u>
5	£5	£2.50
10	£10	£5
12	£12	£6

Mandy = 10 weeks
Sally = 6 weeks

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71. 1
 2 3 4
 5

These digits can be arranged differently, but 3 always needs to be in the centre.

72. Teacher to assess grids
3 sides or less:
Semi-circle, circle, triangle, oval/ellipse.
4 sides or more:
Square, diamond, cross, rectangle, octagon.
No straight lines:
Circle, oval/ellipse.

73. a) 19
b) 12
c) 18
d) 4

74. a) 30, 32 [+2]
b) 51, 61 [+10]
c) 15, 10 [-5]
d) 15, 18 [+3]
e) 33, 22 [-11]
f) 25, 30 [+5]
g) 70, 80 [+10]
h) 14, 17 [+3]

75. Teacher to assess drawings:
1) Danny dog → 55 lbs
Clive cat → 20 lbs
Tom turtle → 10 lbs
Sam snake → 5 lbs
2) $55 + 20 + 10 + 5 = 90$ lbs
3) $55 - 20 = 35$ lbs
4) $65 \text{ lbs} \div 5 \text{ lbs} = 13$ times
5) $10 \times 10 = 100$ lbs
45 lbs heavier than Justin

76. 6 → 18 4 → 14
10 → 26 9 → 24
2 → 10 12 → 30
7 → 20 3 → 12
5 → 16 11 → 28
20 → 46

77. 4
 3 2
 5 1 6

78. Path F gives 10
Path D gives 12
Path B gives the highest (17)
Path E gives the lowest (7)

79. Circle 1 → $20 + 7$
Circle 2 → $14 + 13$ or $15 + 12$
Circle 3 → $18 + 9$
Circle 4 → $24 + 3$

80. The missing numbers are:
17 18
15 23
20 11
6 8

E81. Two digits numbers making 9
27, 36, 45, 54, 63, 72, 81, 90

Three digit numbers making 9
108, 117, 126, 135, 144, 153,
162, 171, 180

Answer = 17 numbers

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E82. Many combinations possible:

Rasp (2p)	Choc (3p)	Cola (5p)
6	1	-
5	-	1
3	3	-
1	1	2
-	5	-
-	-	3

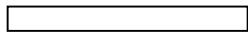
E83. Teacher to assess graphs

E84. One combination possible

4 zebras + 2 tigers
 $(4 \times 7) + (2 \times 5) = 38$ legs

E85. Arrived home 4 pm
School finished 3.30 pm
Lunch time 12.30 pm
School started 9 am
Caught bus 8:30 am
Got up 7:30 am

E86. The screen is at the front:



Stewart	Karla	Rob
Mark	Daniel	Susie

E87. 2 steps → 3 squares
3 steps → 6 squares
4 steps → 10 squares
5 steps → 15 squares
6 steps → 21 squares
10 steps → 55 squares

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E88. Many solutions possible

Calculations use full names
ACT = $116 + 62 + 148 = \text{£}326$
NT = $112 + 148 = \text{£}260$
WA = $104 + 102 = \text{£}206$
NSW = $42 + 83 + 60 = \text{£}185$
SA = $83 + 102 = \text{£}185$
Queensland = $\text{£}112$
Victoria = $\text{£}97$
Tasmania = $\text{£}78$

E89. Tennis Ball

a) $50p + 10p$ [2 coins]
b) $2 \times 20p + 1 \times 10p + 2 \times 5p$

Drink

a) $2 \times 20p + 5p$ [3 coins]
b) $1 \times 20p + 1 \times 10p + 3 \times 5p$

Crazy Candy

a) $20p + 5p + 2p$ [3 coins]
b) $10p + 3 \times 5p + 2p$

E90. $x1$ squares = 8
 $x4$ squares = 3

$x2$ rectangles = 10
 $x3$ rectangles = 4
 $x4$ rectangles = 2
 $x6$ rectangles = 2
 $x8$ rectangles = 1

Total = 30

Extensions 91 → 100

These are open-ended questions,
with no set solutions.

Please refer to introductory Sheet 3
for a thorough explanation.