

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
 $55 \rightarrow 61 - 6, 49 + 6$
 $15 \rightarrow 23 - 8, 7 + 8$
 $35 \rightarrow 44 - 9, 26 + 9$
 $25 \rightarrow 32 - 7, 18 + 7$
 $5 \rightarrow 11 - 6, 2 + 3$
 $50 \rightarrow 62 - 12, 38 + 12$

Maths Challenge Cards

- Many solutions possible
Teacher to assess drawings
- Many solutions possible
Teacher to assess diagrams
- Many solutions possible
Examples include:
 $\$2 + 50c + 20c + 5c$
 $(2x \$1) + (3x 20)c + 10c + 5c$
 $(5x 50c) + (5x 5c)$
- 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: $2x10$'s, $4x5$'s,
 $5x4$'s, $10x2$'s, $20x1$'s

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Maths Challenge Cards

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
 $\$1 + 50c + 50c$
 $\$1 + 50c + (2 \times 20c) + 10c$
 $(2 \times 50c) + (4 \times 20c) + (2 \times 10c)$

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

Answers

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Maths Challenge Cards

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'

$$3 \quad 8$$

$$4 \quad 5$$

$$10 \quad 25$$

$$9 \quad 20$$

$$2 \quad 50$$

36. Teacher to assess drawings
and constructions

37. Two combinations:

$$5 \text{ bikes} + 1 \text{ tricycle}$$

$$2 \text{ bikes} + 3 \text{ tricycles}$$

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

Answers

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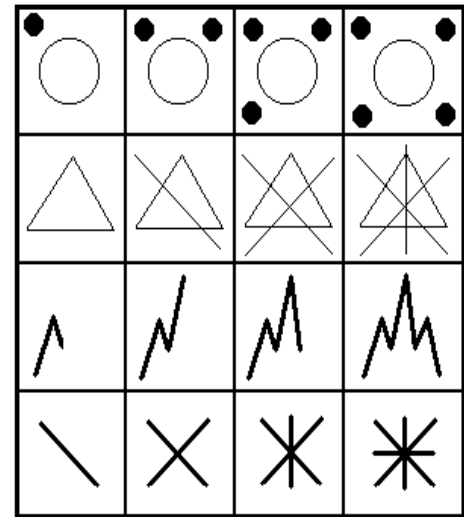


46. Many solutions possible
Example codes:
CBA 123
BAC 321
ABC 231
CAB 132
47. Answers as per layout:
 $13 + 5 = \underline{18}$ $\underline{18} - \underline{11} = 7$
 $\underline{12} - 3 = \underline{9}$ $\underline{11} - 5 = 6$
 $1 + 11 = \underline{12}$ $\underline{11} + \underline{5} = 16$
 $\underline{20} - \underline{5} = 15$ $10 + 12 = \underline{22}$
48. Many solutions possible
Teacher to assess drawings
49. Two main solutions possible
4 pieces using 4 x "1/2 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 $\rightarrow 3 \times 5 + 6 \times 1 = 21$
December $\rightarrow 3 \times 5 + 5 \times 1 = 20$
November $\rightarrow 3 \times 5 + 5 \times 1 = 20$
February $\rightarrow 3 \times 5 + 5 \times 1 = 20$
October $\rightarrow 3 \times 5 + 4 \times 1 = 19$
January $\rightarrow 3 \times 5 + 4 \times 1 = 19$
August $\rightarrow 3 \times 5 + 3 \times 1 = 18$
April $\rightarrow 2 \times 5 + 3 \times 1 = 13$
June $\rightarrow 2 \times 5 + 2 \times 1 = 12$
March $\rightarrow 1 \times 5 + 4 \times 1 = 9$
July $\rightarrow 1 \times 5 + 3 \times 1 = 8$
May $\rightarrow 1 \times 5 + 2 \times 1 = 7$

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) $10c + 15c = 25c$
2) $2 \times 5c = 10c$
3) $3 \times 15c = 45c$
4) $10c + 5c + 15c + 20c = 50c$
5) $(2 \times 10c) + 20c = 40c$

Answers

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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

Answers

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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 → 15kg
Clive cat → 12kg
Tom turtle → 5kg
Sam snake → 2kg
2) $15 + 12 + 5 + 2 = 34$ kg
3) $15 - 12 = 3$ kg
4) $30\text{kg} \div 2\text{kg} = 15$ times
5) $10 \times 5 = 50$ kg,
30 kg heavier than Justin

Maths Challenge Cards

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 (2c)	Choc (3c)	Cola (5c)
6	1	-
5	-	1
3	3	-
1	1	2
-	5	-
-	-	3

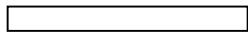
E83. Teacher to assess graphs

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

Maths Challenge Cards

E88. Many solutions possible

E89. Tennis Ball

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

Drink

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

Crazy Candy

- a) $50c + 20c + 5c$ [3 coins]
- b) $3 \times 20c + 10c + 5c$

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.