

Division Strategies

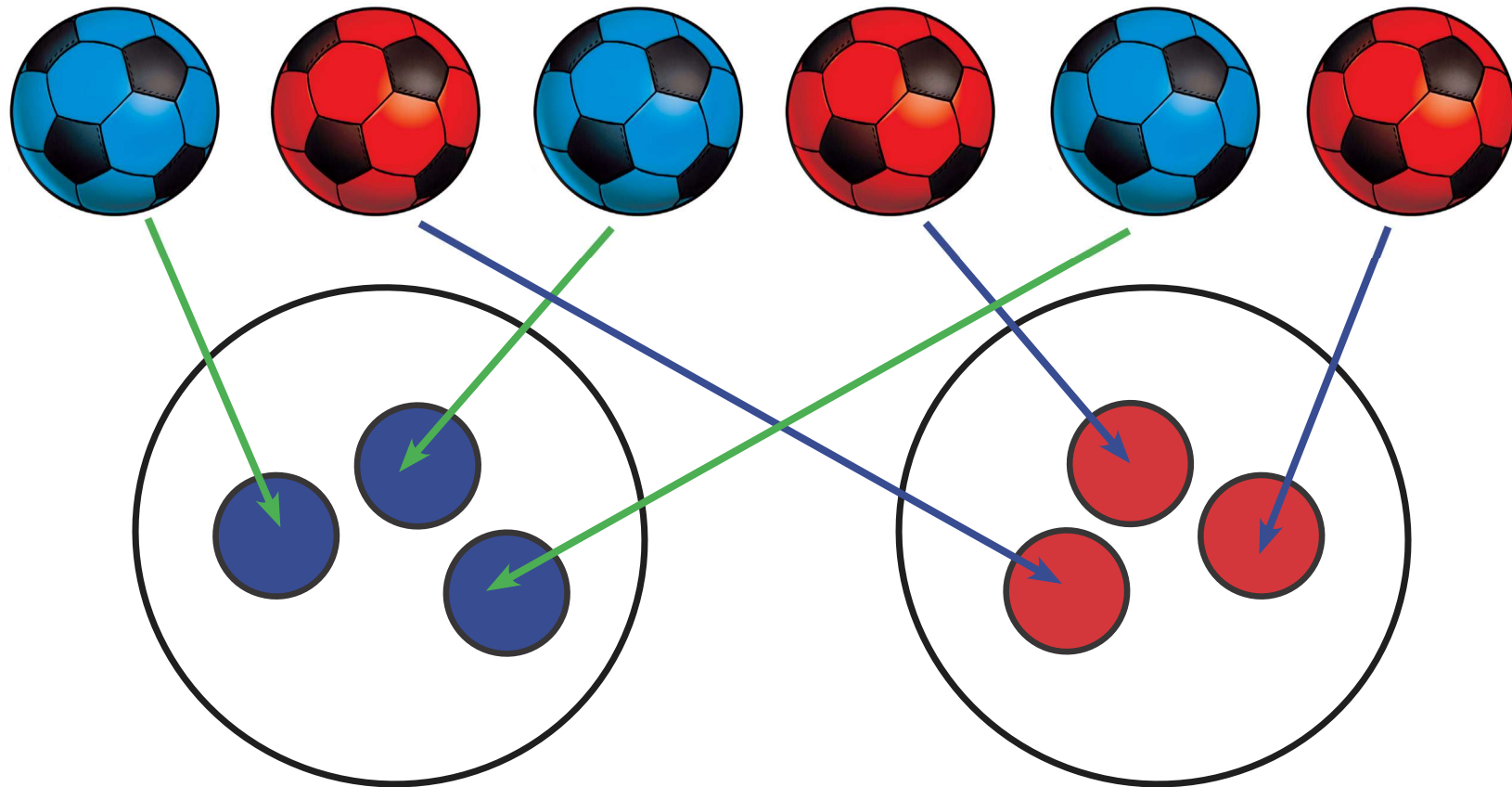
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D1: Objects and Pictures

Sharing

1

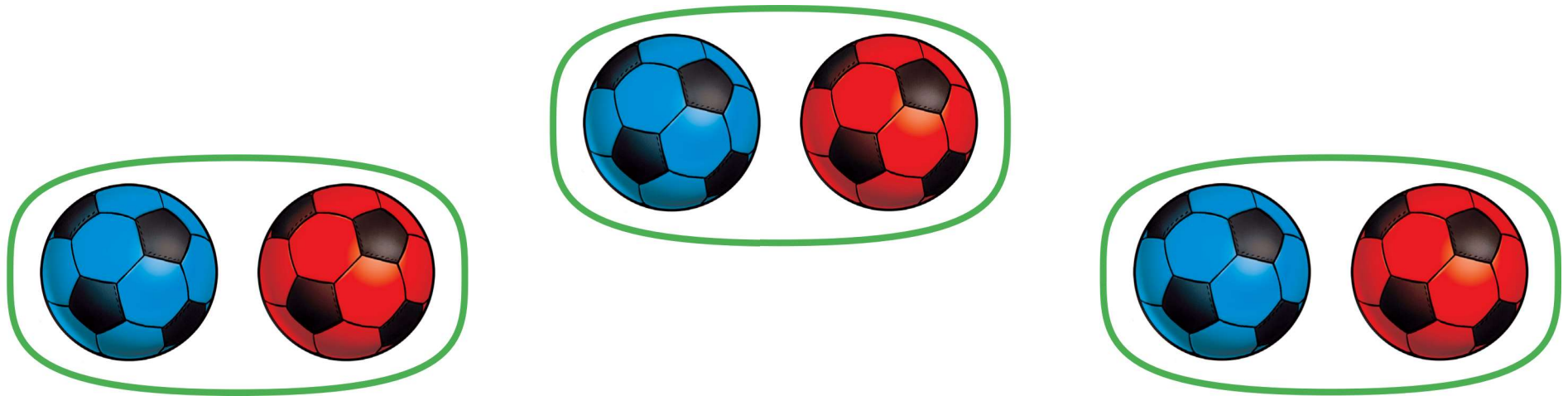


**“If I share 6 footballs fairly into 2 bags,
how many footballs in each bag?” Answer: 3**



D2: Objects and Pictures

1 Grouping



“If a child can carry 2 footballs, how many children do I need to carry 6 footballs? Answer: 3

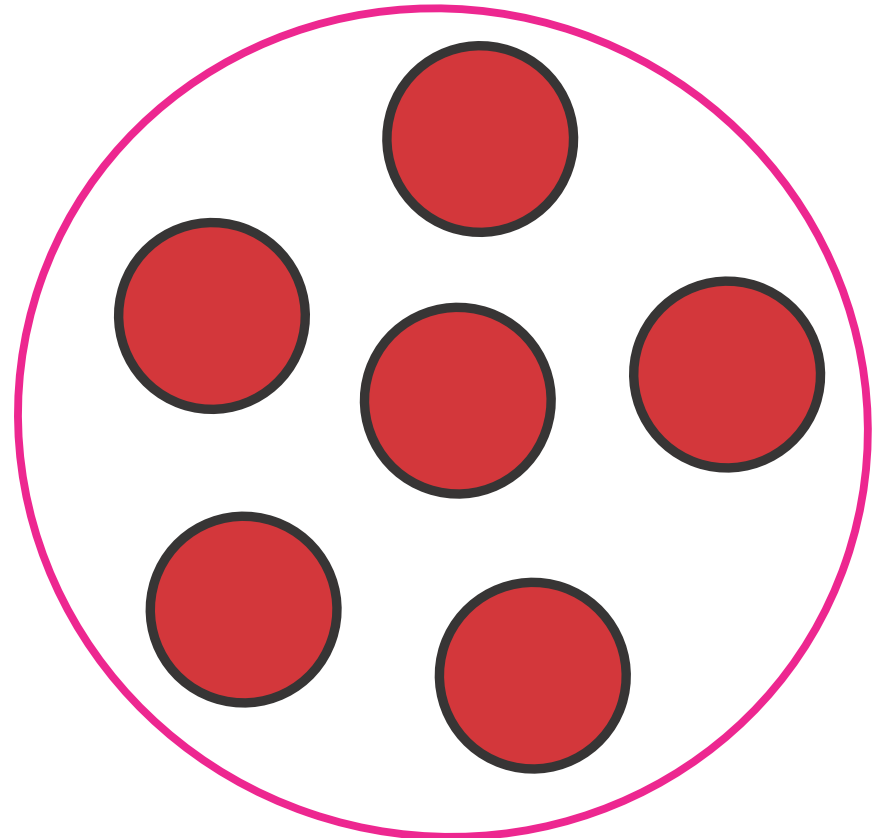
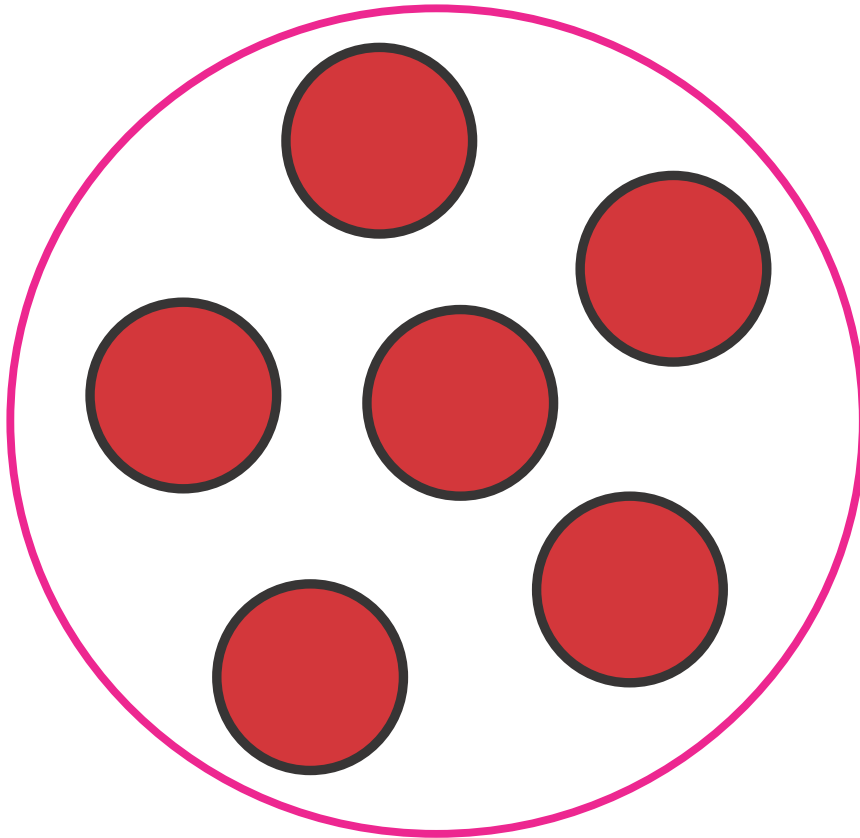


D3: Division as Sharing

2

$$12 \div 2 = 6$$

“If I share **12** into **2** equal amounts, how many in each group?” Answer: **6**



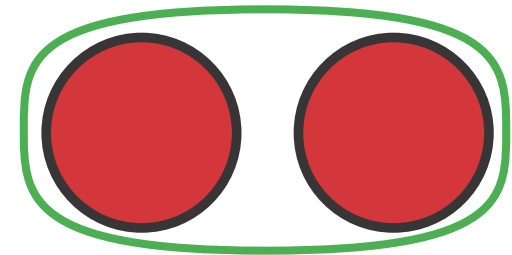
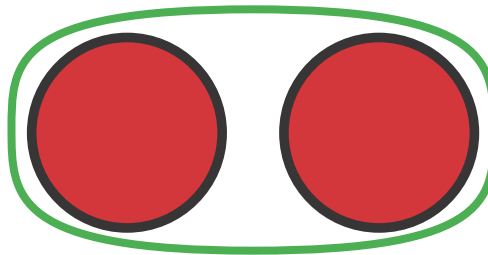
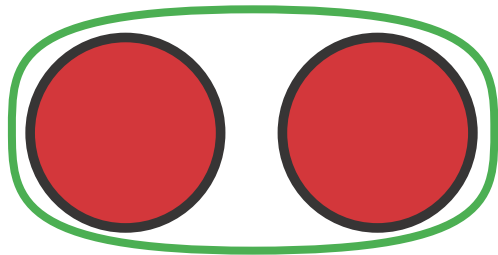
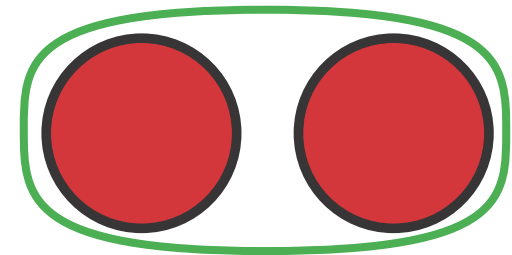
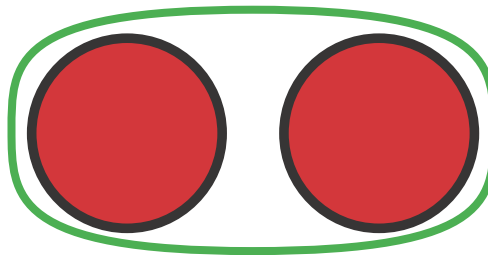
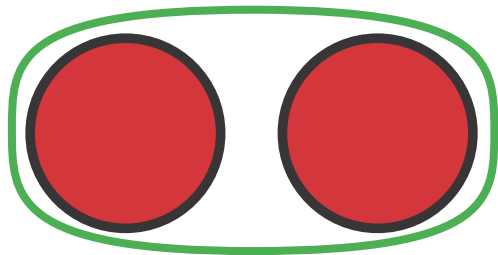
D4: Division as Grouping

2

$$12 \div 2 = 6$$

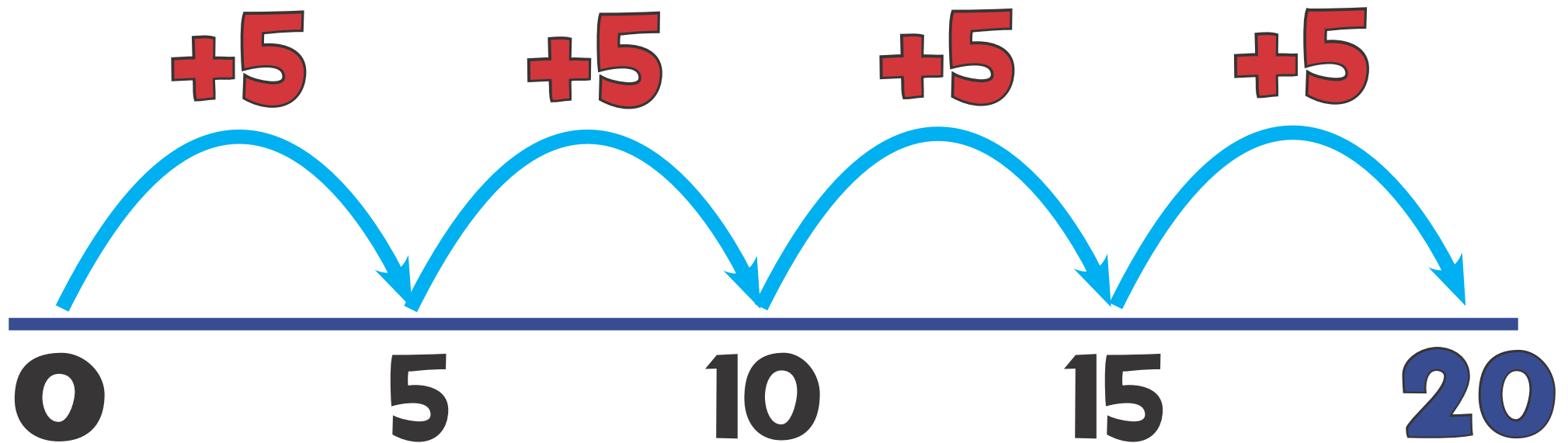
"How many groups of 2
can I fit into 12?"

Answer: 6



D5: Grouping on a Number Line

2



"How many 5s in 20?"

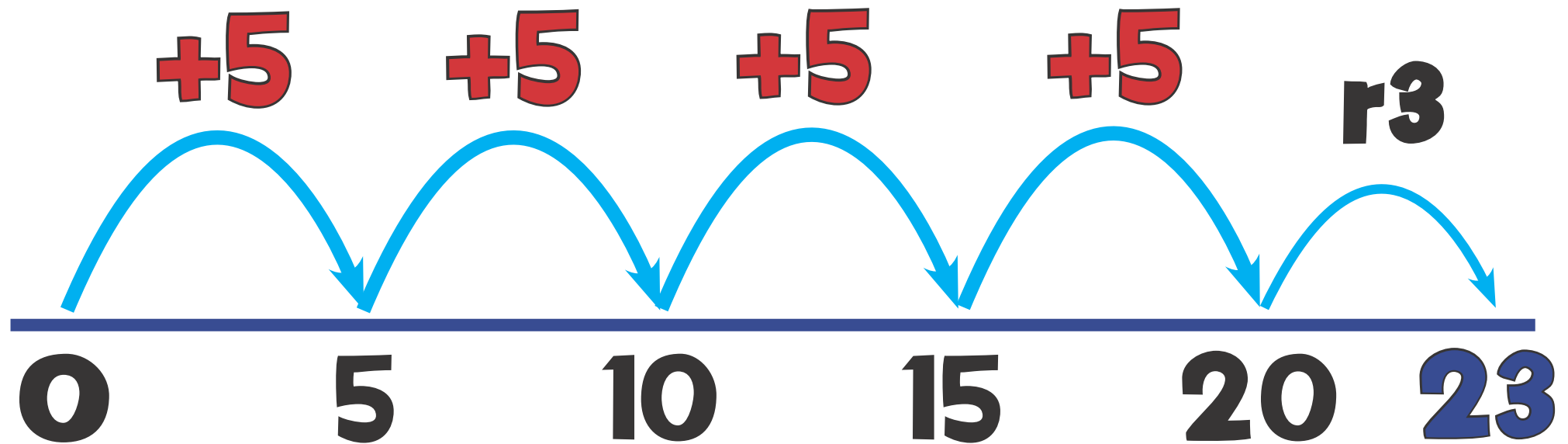
Answer: 4

$$20 \div 5 = 4$$



D5a: Grouping on a Number Line

2



“How many 5s in 23?”

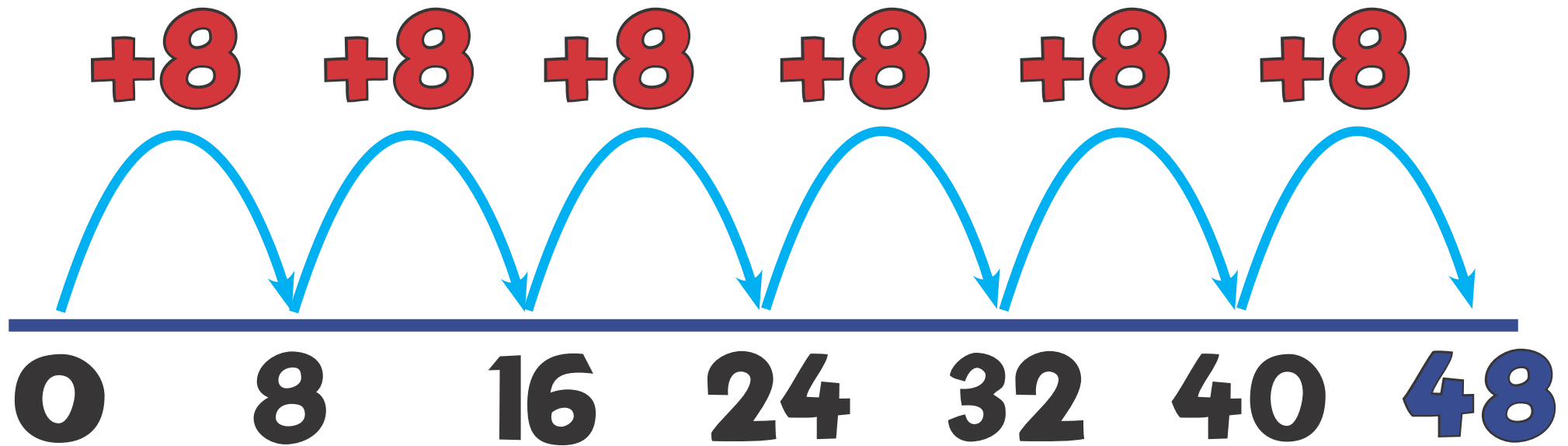
Answer: 4 remainder 3

$$23 \div 5 = 4r3$$



D5b: Grouping on a Number Line

3



“How many **8**s in **48**?”

Answer: **6**

$$48 \div 8 = 6$$



D6: Grouping Grid

3

4	4	4	4	4
4				3

"How many times
can I fit (groups
of) 4 into 27?"

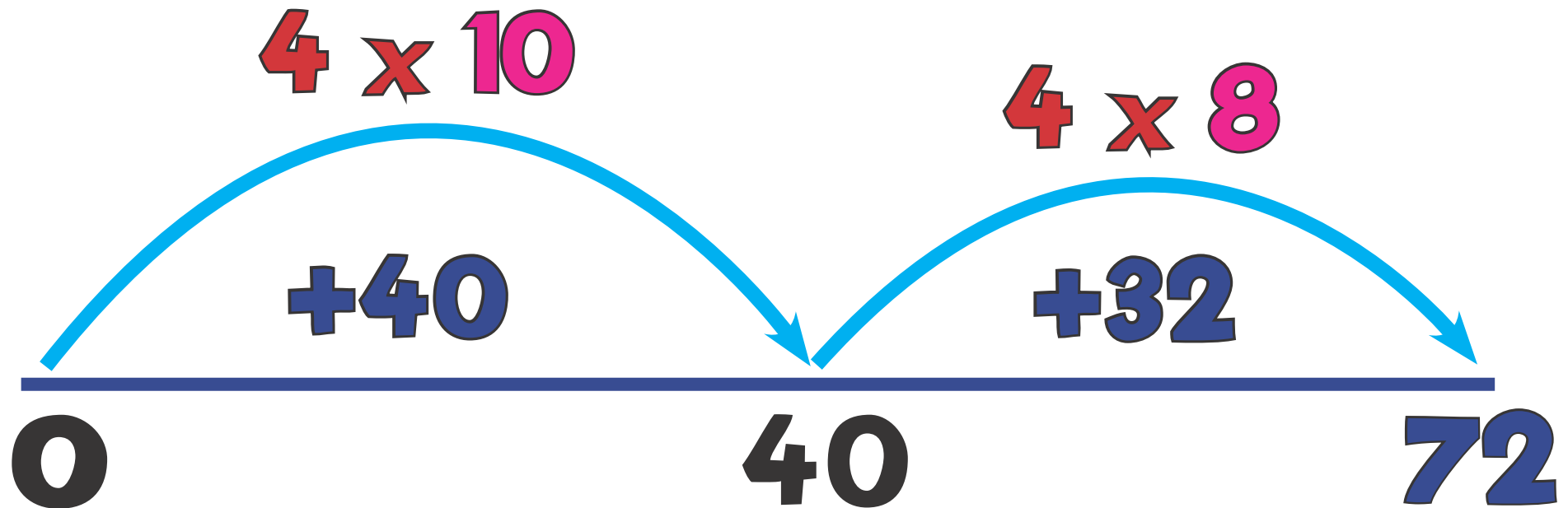
Answer: 6r3

$$27 \div 4 = 6r3$$



D7: Chunking Jump

3



“How many 4s in 72?”

Answer: 18

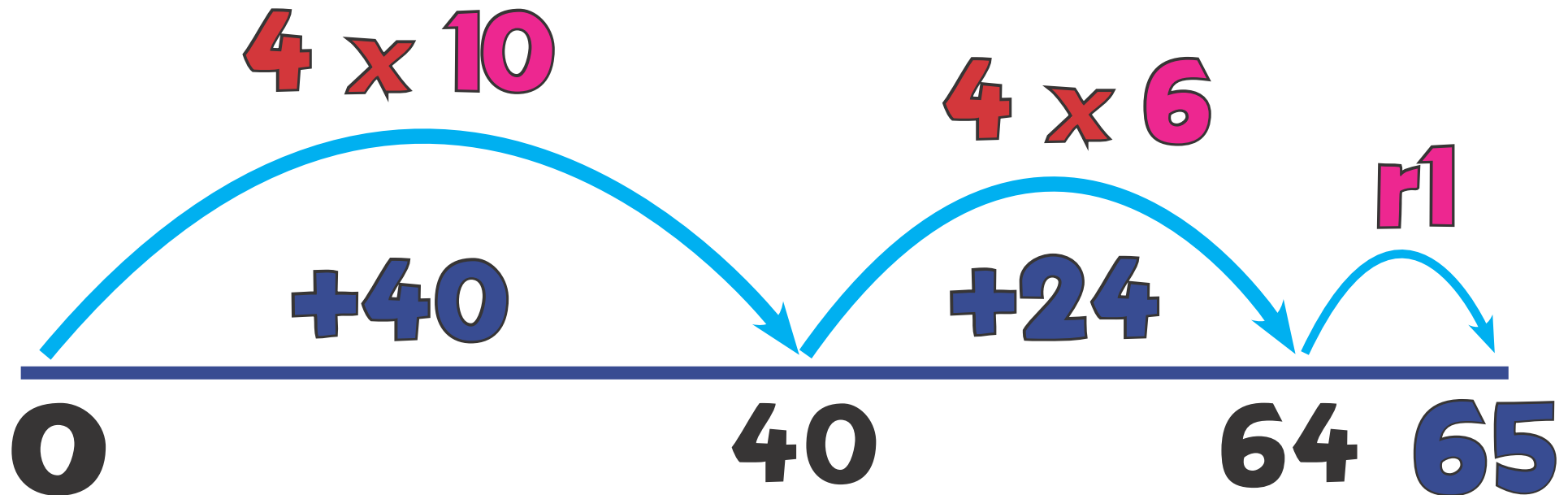
$$72 \div 4 = 18$$



D7a: Chunking Jump

3

Remainders



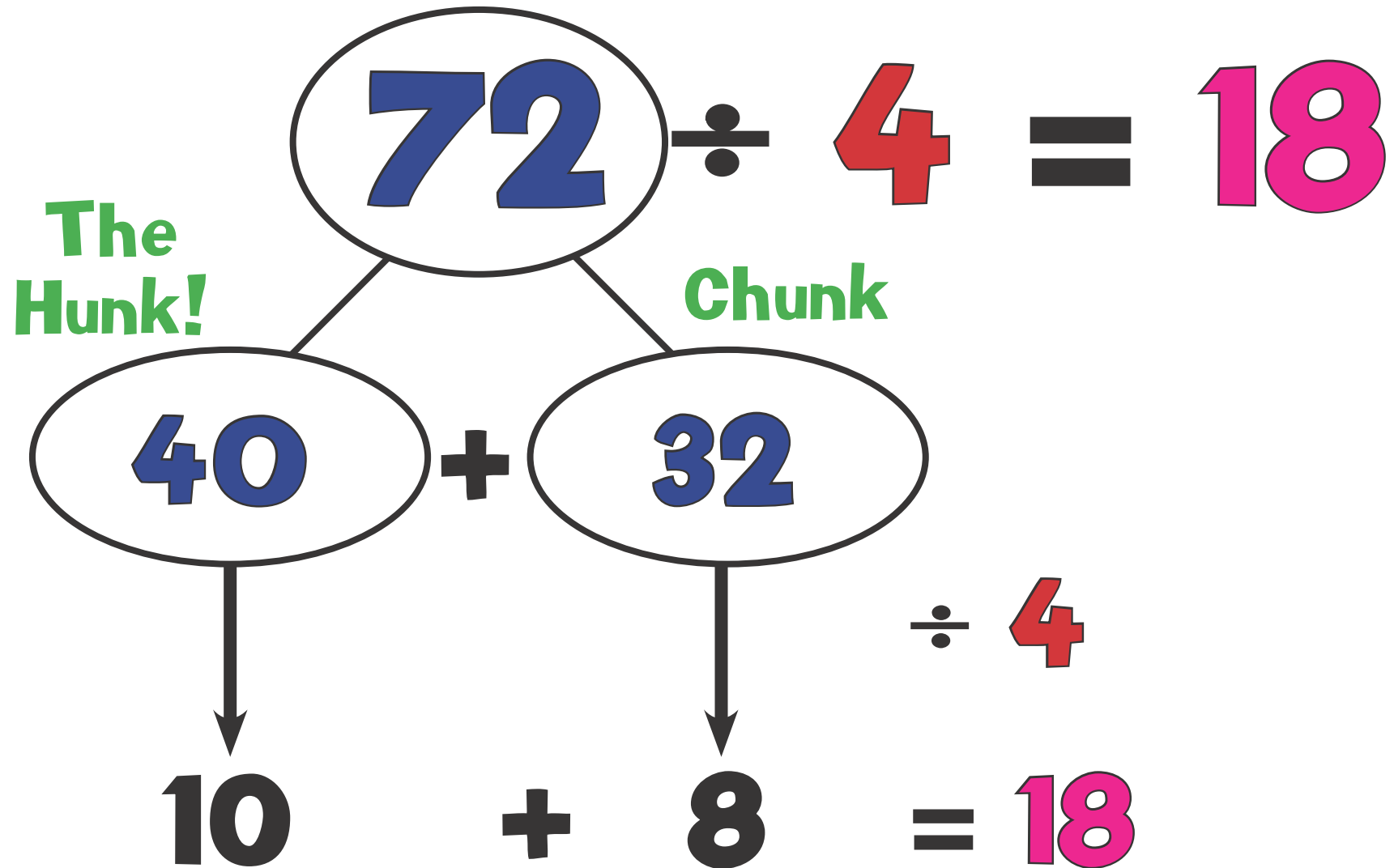
“How many 4s in 65?”
Answer: 16r1

$$65 \div 4 = 16r1$$



D8: Find the Hunk!

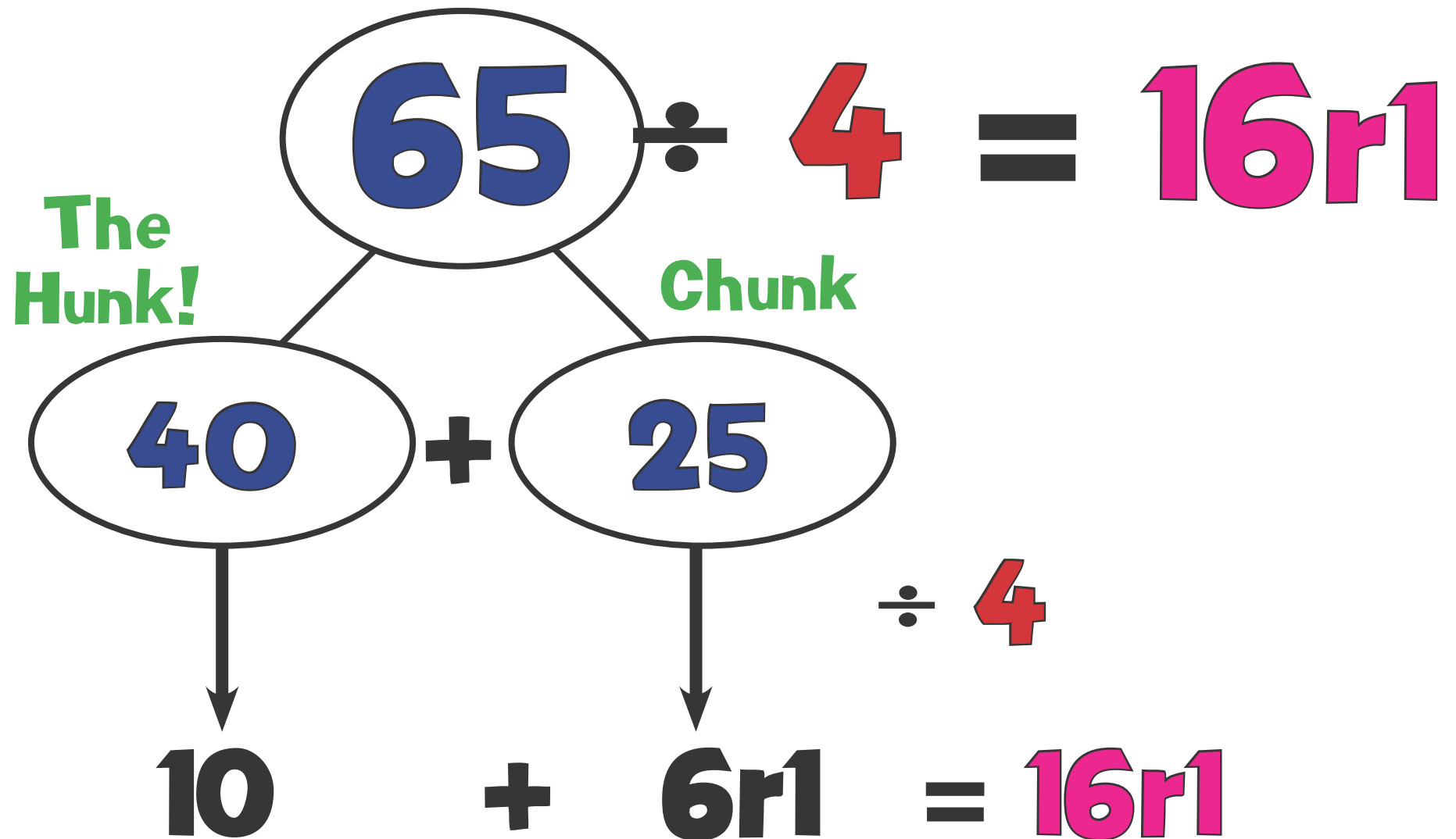
3



D8a: Find the Hunk!

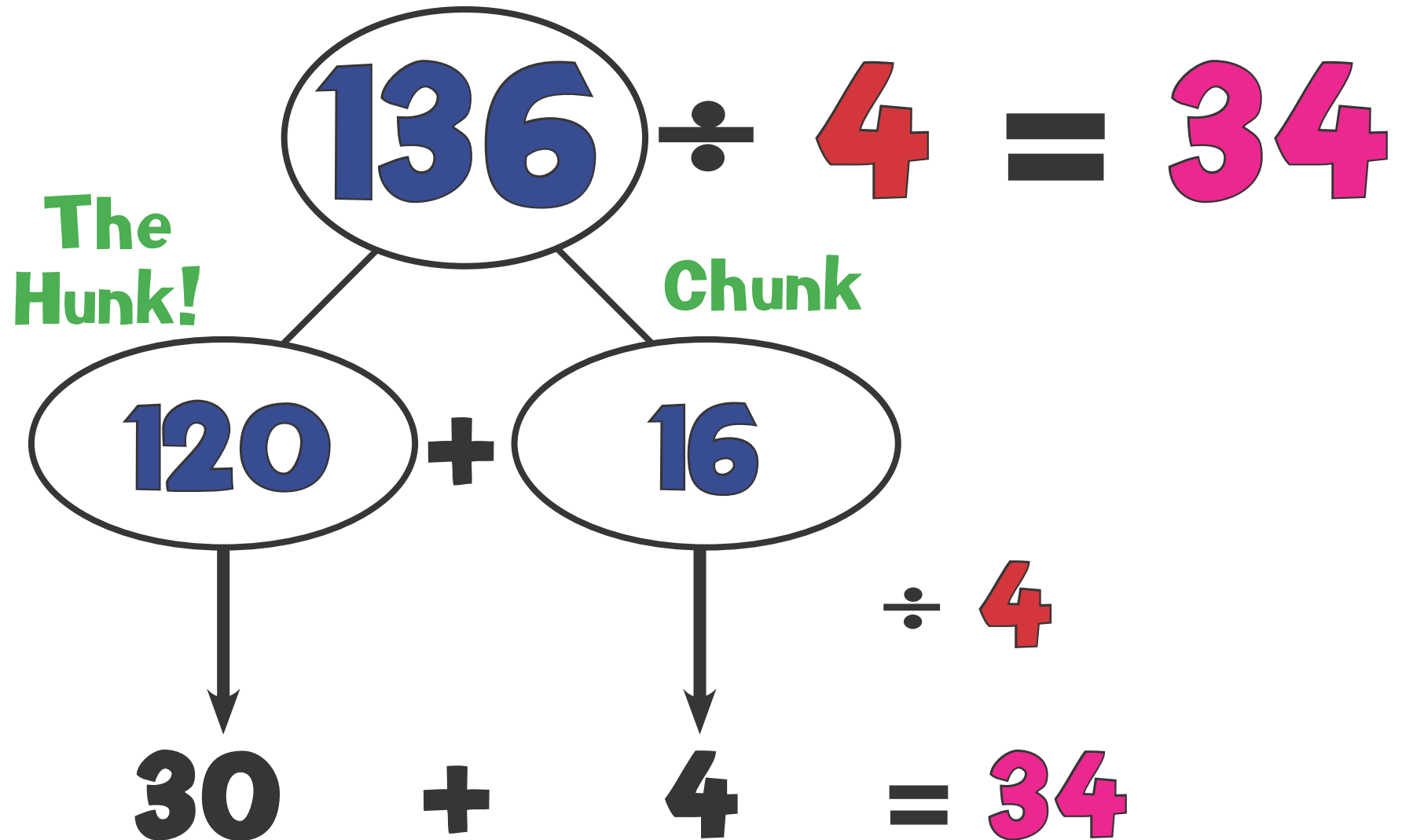
3

Remainders



D9: Mega Hunk!

4



D9c: Mega Hunk!

4

Remainders

$$145 \div 6 = 24r1$$

Mega
Hunk!

Chunk

$$120 + 25$$

$$20 + 4r1 = 24r1$$



D9d: Mega Hunk!

5

Remainders

$$394 \div 6 = 65r4$$

Mega
Hunk!

Chunk

$$360 + 34$$

$$60 + 5r4 = 65r4$$



D9e: Mega Hunk!

5

$$536 \div 4 = 134$$

$$400 + 120 + 16$$

$$100 + 30 + 4 = 134$$



D9f: Mega Hunk!

5

$$1278 \div 6 = 213$$

$$1200 + 60 + 18$$

$$200 + 10 + 3 = 213$$



D9g: Mega Hunk!

5

$$5978 \div 7 = 854$$

$$5600 + 350 + 28$$

$$\begin{array}{c} \downarrow \qquad \qquad \downarrow \qquad \qquad \downarrow \div 7 \\ 800 \quad + \quad 50 \quad + \quad 4 = 854 \end{array}$$



D9h: Mega Hunk!

5

$$\textcircled{846} \div 5 = 169\text{r}1$$

$$\textcircled{500} + \textcircled{300} + \textcircled{46}$$

$$\begin{array}{c} \downarrow \qquad \qquad \downarrow \qquad \qquad \downarrow \qquad \qquad \div 5 \\ 100 \qquad + \qquad 60 \qquad + \qquad 9\text{r}1 \qquad = \qquad 169\text{r}1 \end{array}$$



D9i: Mega Hunk!

6

Simple Long Division

$$480 \div 15 = 32$$

Mega
Hunk!

Chunk

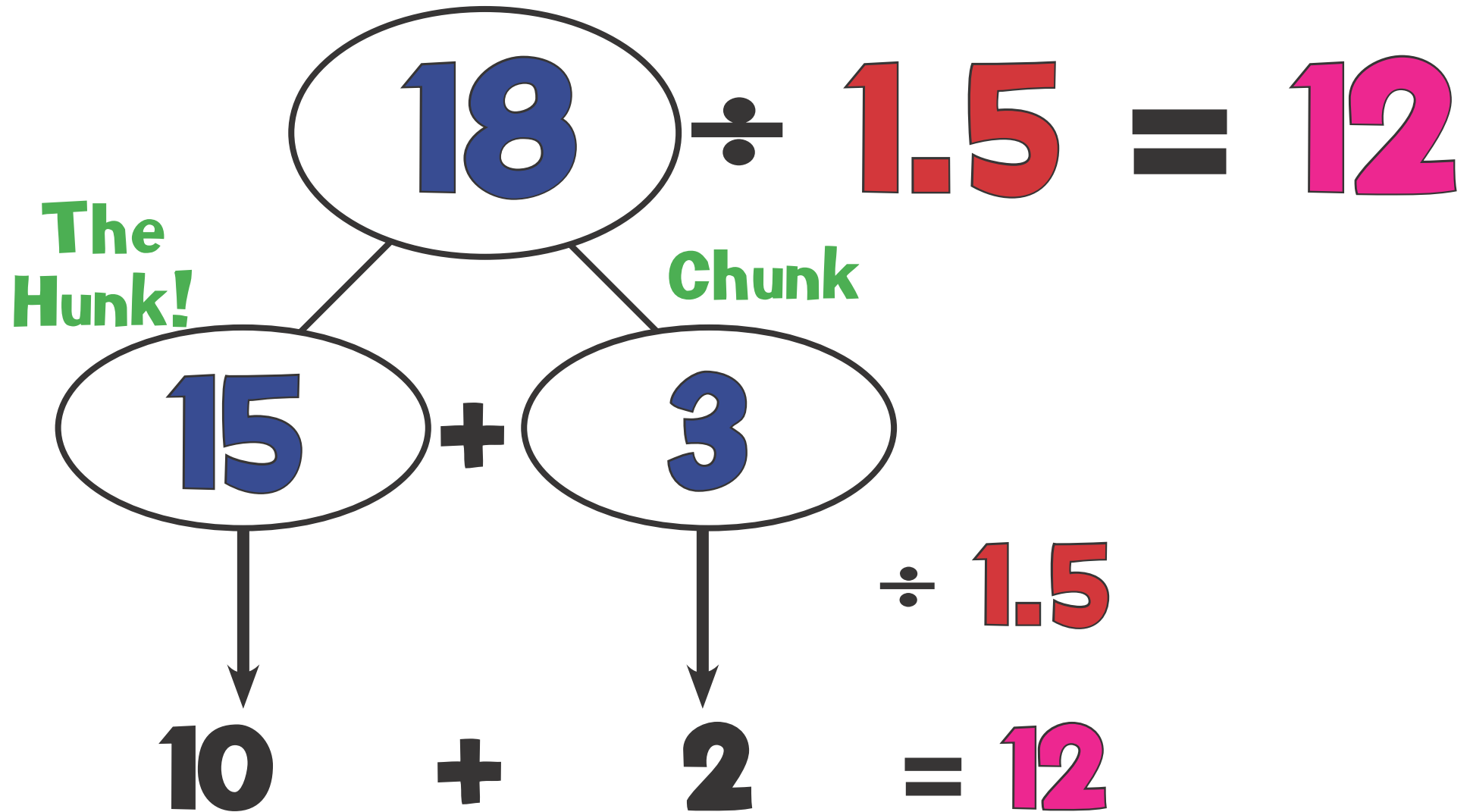
$$450 + 30$$

$$30 + 2 = 32$$



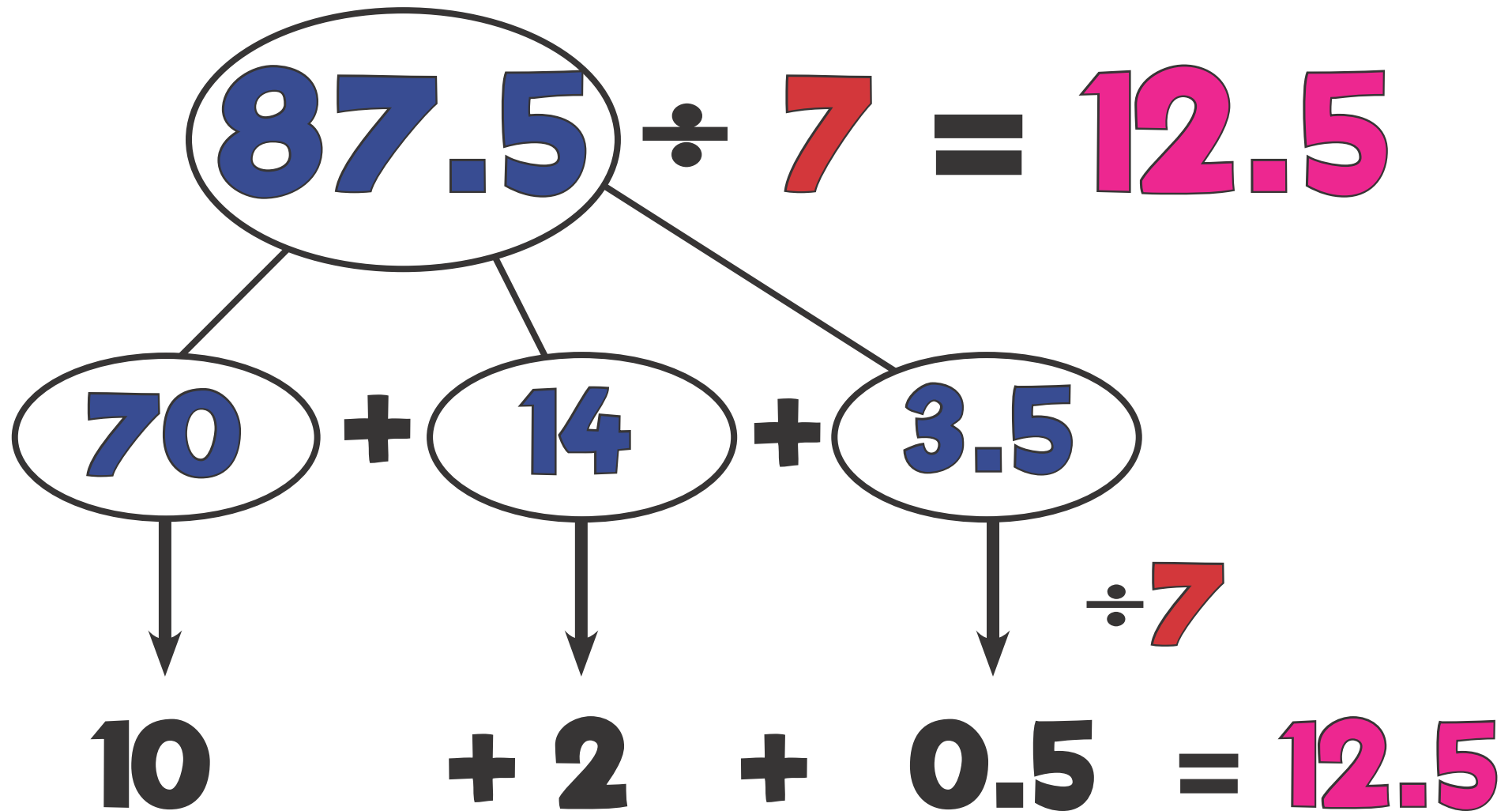
D9j: Decimal Hunk!

6



D9k: Decimal Hunk!

6



D10: Short Division

3

$$72 \div 4 = 18$$

$$\begin{array}{r} 18 \\ 4 \overline{) 72} \end{array}$$



D10a: Short Division

3

$$65 \div 4 = 16r1$$

$$\begin{array}{r} 16r1 \\ 4 \overline{) 65} \end{array}$$



D10b: Short Division

4

$$136 \div 4 = 34$$

$$\begin{array}{r} 34 \\ 4 \overline{) 136} \end{array}$$



D10c: Short Division

4

$$145 \div 6 = 24r1$$

$$\begin{array}{r} 24r1 \\ 6 \overline{) 145} \end{array}$$



D10d: Short Division

5

$$394 \div 6 = 65r4$$

$$\begin{array}{r} 65r4 \\ 6 \overline{) 394} \end{array}$$



D10e: Short Division

5

$$536 \div 4 = 134$$

$$\begin{array}{r} 134 \\ 4 \overline{) 536} \end{array}$$



D10f: Short Division

5

$$1278 \div 6 = 213$$

$$\begin{array}{r} 213 \\ 6 \overline{) 1278} \end{array}$$



D10g: Short Division

$$5978 \div 7 = 854$$

$$\begin{array}{r} 854 \\ 7 \overline{) 5978} \end{array}$$



D10h: Short Division

5

Different Remainders

$$\begin{array}{r} 169.2 \\ 5 \overline{) 846.0} \end{array}$$

Diagram showing short division of 846.0 by 5. The quotient is 169.2. The dividend is 846.0. The divisor is 5. The quotient digits are 1 (blue), 6 (red), 9 (green), and 2 (purple). The dividend digits are 8 (blue), 4 (red), 6 (green), and 0 (purple). The decimal point is black. The remainder is 0.

$$846 \div 5$$

$$\begin{array}{r} 169r1 \\ 5 \overline{) 846} \end{array}$$

Diagram showing short division of 846 by 5. The quotient is 169 with a remainder of 1. The dividend is 846. The divisor is 5. The quotient digits are 1 (blue), 6 (red), and 9 (green). The dividend digits are 8 (blue), 4 (red), and 6 (green). The remainder is 1 (black).

$$\begin{array}{r} 169\frac{1}{5} \\ 5 \overline{) 846} \end{array}$$

Diagram showing short division of 846 by 5. The quotient is 169 and 1/5. The dividend is 846. The divisor is 5. The quotient digits are 1 (blue), 6 (red), and 9 (green). The dividend digits are 8 (blue), 4 (red), and 6 (green). The remainder is 1 (black).



D10k: Short Division

6

$$87.5 \div 7 = 12.5$$

$$\begin{array}{r} 12.5 \\ 7 \overline{) 87.5} \end{array}$$

Short division calculation showing 87.5 divided by 7. The quotient is 12.5. The numbers are color-coded: 1 (pink), 2 (green), 5 (purple) for the quotient; 8 (red), 7 (green), 5 (purple) for the dividend. A pink bracket is on the left of the dividend, and a pink line is above it. A red '1' is above the 8, and a green '3' is above the 7.



D11: Chunking

3

$$\begin{array}{r} 18 \\ 4 \overline{) 72} \\ - 40 \quad (4 \times 10) \\ \hline 32 \\ - 32 \quad (4 \times 8) \\ \hline 0 \end{array}$$

$$72 \div 4 = 18$$



D11: Chunking

3

$$\begin{array}{r} 16\text{r}1 \\ 4 \overline{) 65} \\ - 40 \quad (4 \times 10) \\ \hline 25 \\ - 24 \quad (4 \times 6) \\ \hline 1 \end{array}$$

$$65 \div 4 = 16\text{r}1$$



D11bA: Chunking

4

$$\begin{array}{r} 34 \\ 4 \overline{) 136} \\ \underline{-120} \quad (4 \times 30) \\ 16 \\ \underline{-16} \quad (4 \times 4) \\ 0 \end{array}$$

$$136 \div 4 = 34$$



D11bB: Chunking

4

$$\begin{array}{r} 34 \\ 4 \overline{) 136} \\ \underline{- 40} \quad (4 \times 10) \\ 96 \\ \underline{- 40} \quad (4 \times 10) \\ 56 \\ \underline{- 40} \quad (4 \times 10) \\ 16 \\ \underline{- 16} \quad (4 \times 4) \\ 0 \end{array}$$

$$136 \div 4 = 34$$



D11c: Chunking

4

Remainders

$$\begin{array}{r} 24 \text{ r}1 \\ 6 \overline{) 145} \\ \underline{-120} \quad (6 \times 20) \\ 25 \\ \underline{-24} \quad (6 \times 4) \\ 1 \end{array}$$

$$145 \div 4 = 24 \text{ r}1$$



D11d: Chunking

5

Remainders

$$\begin{array}{r} 65r4 \\ 6 \overline{) 394} \\ \underline{- 360} \quad (6 \times 60) \\ 34 \\ \underline{- 30} \quad (6 \times 5) \\ 4 \end{array}$$

$$394 \div 6 = 65r4$$



D11e: Chunking

5

Mega Chunk

$$\begin{array}{r} 134 \\ 4 \overline{) 536} \\ - 400 \quad (4 \times 100) \\ \hline 136 \\ - 120 \quad (4 \times 30) \\ \hline 16 \\ - 16 \quad (4 \times 4) \\ \hline 0 \end{array}$$

$$536 \div 4 = 134$$



D11f: Chunking

5

Mega Chunk

$$\begin{array}{r} 213 \\ 6 \overline{) 1278} \\ \underline{- 1200} \quad (6 \times 200) \\ 78 \\ \underline{- 60} \quad (6 \times 10) \\ 18 \\ \underline{- 18} \quad (6 \times 3) \\ 0 \end{array}$$

$$1278 \div 6 = 213$$



D11g: Chunking

5

Mega Chunk

$$\begin{array}{r} 854 \\ 7 \overline{) 5978} \\ - 5600 \quad (7 \times 800) \\ \hline 378 \\ - 350 \quad (7 \times 50) \\ \hline 28 \\ - 28 \quad (7 \times 4) \\ \hline 0 \end{array}$$

$$5978 \div 7 = 854$$



D11h: Chunking

5

Mega Chunk

$$\begin{array}{r} 169r1 \\ 5 \overline{)846} \\ - 500 \quad (5 \times 100) \\ \hline 346 \\ - 300 \quad (5 \times 60) \\ \hline 46 \\ - 45 \quad (5 \times 9) \\ \hline 1 \end{array}$$

$$846 \div 5 = 169r1$$



D11iA: Chunking

6

Long Division

$$\begin{array}{r} 32 \\ 15 \overline{) 480} \\ \underline{- 450} \quad (15 \times 30) \\ 30 \\ \underline{- 30} \quad (15 \times 2) \\ 0 \end{array}$$

$$480 \div 15 = 32$$



D11iB: Chunking

6

Long Division

$$\begin{array}{r} 32 \\ 15 \overline{) 480} \\ \underline{- 150} \quad (15 \times 10) \\ 330 \\ \underline{- 150} \quad (15 \times 10) \\ 180 \\ \underline{- 150} \quad (15 \times 10) \\ 30 \\ \underline{- 30} \quad (15 \times 2) \\ 0 \end{array}$$

$$480 \div 15 = 32$$



D12: Long Division

6

Short Division Method

$$\begin{array}{r} 26 \text{ r}21 \\ 37 \overline{) 983} \end{array}$$

The diagram illustrates the short division method for 983 divided by 37. The divisor 37 is written in black on the left. The dividend 983 is written in the middle, with the 9 in blue, the 8 in red, and the 3 in green. Above the dividend, the quotient 26 is written in pink, followed by a remainder of 21 (r21) also in pink. A pink horizontal line separates the quotient from the dividend. Above the 9, a small blue 9 is written. Above the 8, a small red 24 is written.



D13A: Long Division

6

Chunking Method

$$\begin{array}{r} 26 \text{ r}21 \\ 37 \overline{) 983} \\ \underline{- 740} \quad (37 \times 20) \\ 243 \\ \underline{- 222} \quad (37 \times 6) \\ 21 \end{array}$$

$$983 \div 37 = 26 \text{ r}21$$



D13_B: Long Division

6

Chunking Method

$$\begin{array}{r} 26 \text{ r}21 \\ 37 \overline{) 983} \\ \underline{- 370} \quad (37 \times 10) \\ 613 \\ \underline{- 370} \quad (37 \times 10) \\ 243 \\ \underline{- 222} \quad (37 \times 6) \\ 21 \end{array}$$

$$983 \div 37 = 26 \text{ r}21$$



D14: Long Division

6

Traditional Method

$$\begin{array}{r} 26 \text{ r}21 \\ 37 \overline{) 983} \\ \underline{- 74} \\ 243 \\ \underline{- 222} \\ 21 \end{array}$$

$$983 \div 37 = 26 \text{ r}21$$



MF: 2x Table Facts

$$2 \times 1 = 2$$

$$2 \times 2 = 4$$

$$2 \times 3 = 6$$

$$2 \times 4 = 8$$

$$2 \times 5 = 10$$

$$2 \times 6 = 12$$

$$2 \times 7 = 14$$

$$2 \times 8 = 16$$

$$2 \times 9 = 18$$

$$2 \times 10 = 20$$

$$2 \times 11 = 22$$

$$2 \times 12 = 24$$



MF: 3x Table Facts

$$3 \times 1 = 3$$

$$3 \times 2 = 6$$

$$3 \times 3 = 9$$

$$3 \times 4 = 12$$

$$3 \times 5 = 15$$

$$3 \times 6 = 18$$

$$3 \times 7 = 21$$

$$3 \times 8 = 24$$

$$3 \times 9 = 27$$

$$3 \times 10 = 30$$

$$3 \times 11 = 33$$

$$3 \times 12 = 36$$



MF: 4x Table Facts

$$4 \times 1 = 4$$

$$4 \times 2 = 8$$

$$4 \times 3 = 12$$

$$4 \times 4 = 16$$

$$4 \times 5 = 20$$

$$4 \times 6 = 24$$

$$4 \times 7 = 28$$

$$4 \times 8 = 32$$

$$4 \times 9 = 36$$

$$4 \times 10 = 40$$

$$4 \times 11 = 44$$

$$4 \times 12 = 48$$



MF: 5x Table Facts

$5 \times 1 = 5$

$5 \times 2 = 10$

$5 \times 3 = 15$

$5 \times 4 = 20$

$5 \times 5 = 25$

$5 \times 6 = 30$

$5 \times 7 = 35$

$5 \times 8 = 40$

$5 \times 9 = 45$

$5 \times 10 = 50$

$5 \times 11 = 55$

$5 \times 12 = 60$



MF: 6x Table Facts

$6 \times 1 = 6$

$6 \times 2 = 12$

$6 \times 3 = 18$

$6 \times 4 = 24$

$6 \times 5 = 30$

$6 \times 6 = 36$

$6 \times 7 = 42$

$6 \times 8 = 48$

$6 \times 9 = 54$

$6 \times 10 = 60$

$6 \times 11 = 66$

$6 \times 12 = 72$



MF: 7x Table Facts

$$7 \times 1 = 7$$

$$7 \times 2 = 14$$

$$7 \times 3 = 21$$

$$7 \times 4 = 28$$

$$7 \times 5 = 35$$

$$7 \times 6 = 42$$

$$7 \times 7 = 49$$

$$7 \times 8 = 56$$

$$7 \times 9 = 63$$

$$7 \times 10 = 70$$

$$7 \times 11 = 77$$

$$7 \times 12 = 84$$



MF: 8x Table Facts

$$8 \times 1 = 8$$

$$8 \times 2 = 16$$

$$8 \times 3 = 24$$

$$8 \times 4 = 32$$

$$8 \times 5 = 40$$

$$8 \times 6 = 48$$

$$8 \times 7 = 56$$

$$8 \times 8 = 64$$

$$8 \times 9 = 72$$

$$8 \times 10 = 80$$

$$8 \times 11 = 88$$

$$8 \times 12 = 96$$



MF: 9x Table Facts

$$9 \times 1 = 9$$

$$9 \times 2 = 18$$

$$9 \times 3 = 27$$

$$9 \times 4 = 36$$

$$9 \times 5 = 45$$

$$9 \times 6 = 54$$

$$9 \times 7 = 63$$

$$9 \times 8 = 72$$

$$9 \times 9 = 81$$

$$9 \times 10 = 90$$

$$9 \times 11 = 99$$

$$9 \times 12 = 108$$



MF: 10x Table Facts

$10 \times 1 = 10$

$10 \times 7 = 70$

$10 \times 2 = 20$

$10 \times 8 = 80$

$10 \times 3 = 30$

$10 \times 9 = 90$

$10 \times 4 = 40$

$10 \times 10 = 100$

$10 \times 5 = 50$

$10 \times 11 = 110$

$10 \times 6 = 60$

$10 \times 12 = 120$



MF: 11x Table Facts

$11 \times 1 = 11$

$11 \times 2 = 22$

$11 \times 3 = 33$

$11 \times 4 = 44$

$11 \times 5 = 55$

$11 \times 6 = 66$

$11 \times 7 = 77$

$11 \times 8 = 88$

$11 \times 9 = 99$

$11 \times 10 = 110$

$11 \times 11 = 121$

$11 \times 12 = 132$



MF: 12x Table Facts

$12 \times 1 = 12$

$12 \times 2 = 24$

$12 \times 3 = 36$

$12 \times 4 = 48$

$12 \times 5 = 60$

$12 \times 6 = 72$

$12 \times 7 = 84$

$12 \times 8 = 96$

$12 \times 9 = 108$

$12 \times 10 = 120$

$12 \times 11 = 132$

$12 \times 12 = 144$

