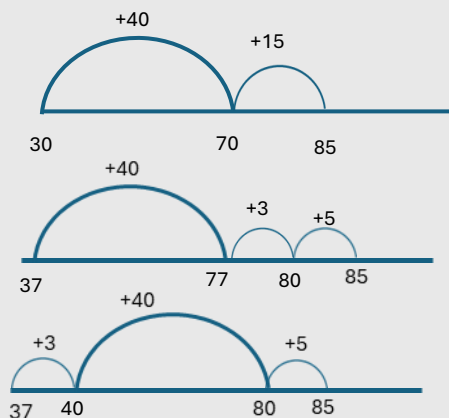


Addition Strategies

Adding Up in Chunks/Counting on

$$37 + 48$$



Reordering

$$25 + 26 + 75$$



$$100 + 26 = 126$$

Place Value – Partitioning

$$116 + 127$$

$$100 + 100 = 200$$

$$10 + 20 = 30$$

$$6 + 7 = 13$$

$$200 + 30 + 13 = 242$$

Making Tens/Bridging through 10

$$49 + 38$$



$$50 + 37 = 87$$

Compensation

$$67 + 28$$

$$+ 2$$

$$67 + 30 = 97$$

$$97 - 2 = 95$$

Double/Near Doubles

$$16 + 17$$



$$16 + 16 = 32$$

$$32 + 1 = 33$$

Friendly Numbers

$$28 + 47$$

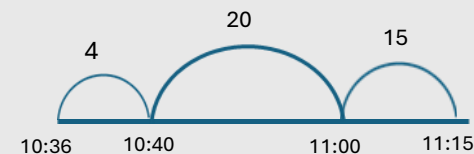
$$+2 \quad -2$$

$$30 + 45 = 75$$

Bridging through 60

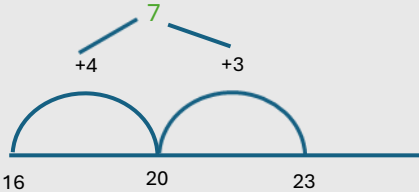
10:36

How many minutes is it to 11:15?



$$20 + 15 + 4 = 39 \text{ minutes}$$

Subtraction Strategies

<u>Removal or Counting Back</u> $123 - 69$ $123 - (20 + 40 + 3 + 6)$ $123 - 20 = 203$ $103 - 40 = 63$ $63 - 3 = 60$ $60 - 6 = 54$	<u>Reordering</u> $25 - 6 - 5$  $20 - 6 = 14$	<u>Place Value – Partitioning</u> $367 - 154$ $367 - 100 = 267$ $267 - 50 = 217$ $217 - 4 = 213$ $367 - 100 - 50 - 4 = 213$	<u>Adding Up/Bridging through 10</u> $23 - 16$ $16 + 4 = 20$ $20 + 3 = 23$ 
<u>Place Value and Negative Numbers</u> $399 - 254$ $(300 + 90 + 9) - (200 + 50 + 9)$ $300 + 90 + 9$ $-200 + 50 + 4$ $100 + 40 + 5$ $= 145$	<u>Adjusting for Easier Numbers</u> $123 - 59$ $+ 1$ $123 - 60 = 63$ $63 + 1 = 64$	<u>Keep a Constant Difference</u> $151 - 98$ $(151 + 2) - (98 + 2)$ $153 - 100 = 53$ $151 - 98 = 53$	

Multiplication/Division Strategies

Friendly Numbers 9 x 15 10 x 15 – 150 150 – 15 = 135 Don't forget to 'undo' your change!	Repeated Addition 6 x 15 15 + 15 + 15 + 15 + 15 + 15 15 + 15 = 30 30 + 15 = 45 45 + 15 – 60 60 + 15 = 75 75 + 15 = 90	Partial Produces 6 x 125 6 x (100 + 20 + 5) (6 x 100) + (6 x 20) + 6 x 5 600 + 120 + 30 = 750	Doubling and Halving 24 x 8 x2 ÷2 48 x 4 x2 ÷2 96 x 2 x2 ÷2 192						
Breaking Factors into Smaller Factors 12 x 25 2 x 6 2 x 25 = 50 50 x 6 = 300	Grid Method 35 x 7 <table><tr><td>x</td><td>30</td><td>5</td></tr><tr><td>7</td><td>210</td><td>35</td></tr></table> 210 + 35 = 245	x	30	5	7	210	35	Partial Quotients 36 R 10 15 550 -150 (10 x 15) 400 -300 (20 x 15) 100 -30 (2 x 15) 70 -60 (4 x 15) 10	Multiplying Up 72 ÷ 8 8 x 5 = 40 8 x 4 = 32 (5 + 4) = (40 + 32) 8 x 9 = 72
x	30	5							
7	210	35							

Repeated Subtraction

$$24 \div 6$$

$$24 - 6 - 6 - 6 - 6$$

$$6 \times 4 = 24 \text{ so } 24 \div 6 = 4$$