**Subtracting a larger number from a smaller number**

**One**

1. 7 – 13
2. 9 – 14
3. 3 – 19
4. 12 – 25
5. 17 – 30
6. 21 – 45

**Two**

1. 60 – 200
2. 43 – 85
3. 240 – 500
4. 62 – 89
5. 123 – 567
6. 109 – 508

**Three**

1. 2.1 – 7.3
2. 5.2 – 8.5
3. 4.5 – 7.1
4. 13.6 – 17.9
5. 0.6 – 5.4
6. 542.8 – 651.6

**Four**

**Five**

1. 8*d* – 14*d*
2. 450*g* – 600*g*
3. 6*ab* + 3*ab* – 10*ba*
4. 3*a* + *b* – 5*b* + *a*
5. 2*x* + 6*x*2 – 28*x*2
6. 2*f* + 5*g* + 13*f* – 9*g* + *g*

**Adding to, or subtracting from, a negative number**

**One**

1. -6 + 11
2. -8 – 4
3. -7 + 18
4. -15 – 27
5. -12 + 20
6. -31 – 48

**Two**

1. -30 + 300
2. -23 – 75
3. -310 + 600
4. -12 – 52
5. -103 + 529
6. -112 – 417

**Three**

1. -2.3 + 5.3
2. -5.1 – 7.5
3. -2.3 + 4.1
4. -11.6 – 10.9
5. -0.5 + 3.6
6. -375.8 – 119.6

**Four**

1. -
2. -
3. -
4. -
5. -
6. -

**Five**

1. -3*g* + 13*g*
2. -210*p* – 700*p*
3. -4*st* + *st* + 10*ts*
4. -7*d* – *j* – 7*j* + *d*
5. -2*x* + 6*x*2 + 8*x*2
6. -6*h* + 6*k* – 6*h* + *h*

3 + 2 = 5 2 + 2 = 4 1 + 2 = 3

We can show this on a diagram using two parallel number lines

1. Draw a diagram to show 3 + 3 = 6, 2 + 3 = 5, 1 + 3 = 4.

How could you extend the number lines to show negative numbers? Extend as far as -5.

 Continue the patterns that your arrows make. Use this to find the answers to

0 + 3, -1 + 3, -2 + 3, -3 + 3, -4 + 3, -5 + 3. Record your calculations and solutions.

2. Draw a diagram to show 3 + 3 = 6, 3 + 2 = 5, 3 + 1 = 4, 3 + 0 = 3. You should get a different pattern this time.

Continue the pattern that your arrows make and use this to find 3 + -1, 3 + -2, 3 + -3, 3 + -4.

Use these answers to find a rule for *abbreviating* 3 + -1, 3 + -2, … (i.e. Find another way of writing 3 + -1 so that you get the right answer without drawing a diagram.)

3. Repeat the exercise for 4 – 2 = 2, 4 – 1 = 3, 4 – 0 = 4, and extend the pattern to find answers for 4 – -1, 4 – -2, 4 – -3.

Find a rule for abbreviating 4 – -2.

1. You should have found two rules. One for adding a negative number and one for subtracting a negative number. Use these to find:
* 2 + -1
* 9 – -3
* 4 – -4
* 2 – -8
* 5 + -2
* 14 + -7
1. Try and find the correct answers for these. Explain your reasoning.
* 3 + -5
* -3 + -2
* 4 + -9
* 9 + -15
* -2 – -3
* -4 – -5

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**Adding a negative number**

**One**

1. 7 + -13
2. -9 + -14
3. 3 + -19
4. -12 + -25
5. 17 + -30
6. -21 + -45

**Two**

1. 60 + -200
2. -43 + -85
3. 240 + -500
4. -62 + -89
5. 123 + -567
6. -109 + -508

**Three**

1. 2.1 + -7.3
2. -5.2 + -8.5
3. 4.5 + -7.1
4. -13.6 + -17.9
5. 0.6 + -5.4
6. -542.8 + -651.6

**Four**

**Five**

1. 8*d* + -14*d*
2. -450*g* + -600*g*
3. 6*ab* + -5*ab* – 10*ba*
4. -3*a* + -*b* – 5*b* + -*a*
5. 2*x* + -6*x*2 + 15*x*2
6. -2*f* + 5*g* + -13*f* – 9*g*

**Subtracting a negative number**

**One**

1. 7 – -13
2. -9 – -14
3. 3 – -19
4. -12 – -25
5. 17 – -30
6. -21 – -45

**Two**

1. 60 – -200
2. -43 – -85
3. 240 – -500
4. -62 – -89
5. 123 – -567
6. -109 – -508

**Three**

1. 2.1 – -7.3
2. -5.2 – -8.5
3. 4.5 – -7.1
4. -13.6 – -17.9
5. 0.6 – -5.4
6. -542.8 – -651.6

**Four**

**Five**

1. 8*d* – -14*d*
2. -450*g* – -600*g*
3. 6*ab* – -5*ab* – 10*ba*
4. -3*a* – -*b* + 5*b* – -*a*
5. 2*x* – -6*x*2 + 15*x*2
6. -2*f* + 5*g* – -13*f* – 9*g*