**Collecting like terms with more than one variable**

|  |  |  |
| --- | --- | --- |
| Green1. a + b + a + b =
2. 3a + b + a + 2b =
3. f + g + 2f + g =
4. 3h + i + h + i =
5. 2p + 2q + p + q =
6. a + b + c + a + b + c + a + b + c =
7. 9f + g + h + f =
8. 10g + 2h + 5g + 4h =
9. 30t + 3u + 10t + 7u =
10. 2x + 3y + 2z + x + 3y + 3z =
 | Amber1. 5a + b – a + b =
2. 3y + 4a – y – a =
3. 5f + 4g – 2f – 2g =
4. 2a + 2b + 2c – a – b – c =
5. 4x + 5y + 6z – 4y – 4x + z =
6. 3r + 4s – r – 2s =
7. 7w – 2d + w + 4d =
8. 3q – 4g + q + 9g =
9. 4r – 5g + r + 10g =
10. 8t – a – b – t =
 | Red1. 4a + b – 5a =
2. 6k + 3p – 8k =
3. 3e + 5f + e – 10f =
4. -4e – 5f – 6e -7f =
5. ab + c + ab + 2c =
6. 3ab + 3f – ab + f =
7. 3ab + 2gh + 5ab – 4gh =
8. 3ab + 2bc – ac + 2ab + ac =
9. –xy + 3y + 4xy – y =
10. a + b + c + ab + bc + ac – a – ab – 2bc =
 |

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**Collecting like terms with more than one variable**

|  |  |  |
| --- | --- | --- |
| Green1. a + b + a + b =
2. 3a + b + a + 2b =
3. f + g + 2f + g =
4. 3h + i + h + i =
5. 2p + 2q + p + q =
6. a + b + c + a + b + c + a + b + c =
7. 9f + g + h + f =
8. 10g + 2h + 5g + 4h =
9. 30t + 3u + 10t + 7u =
10. 2x + 3y + 2z + x + 3y + 3z =
 | Amber1. 5a + b – a + b =
2. 3y + 4a – y – a =
3. 5f + 4g – 2f – 2g =
4. 2a + 2b + 2c – a – b – c =
5. 4x + 5y + 6z – 4y – 4x + z =
6. 3r + 4s – r – 2s =
7. 7w – 2d + w + 4d =
8. 3q – 4g + q + 9g =
9. 4r – 5g + r + 10g =
10. 8t – a – b – t =
 | Red1. 4a + b – 5a =
2. 6k + 3p – 8k =
3. 3e + 5f + e – 10f =
4. -4e – 5f – 6e -7f =
5. ab + c + ab + 2c =
6. 3ab + 3f – ab + f =
7. 3ab + 2gh + 5ab – 4gh =
8. 3ab + 2bc – ac + 2ab + ac =
9. –xy + 3y + 4xy – y =
10. a + b + c + ab + bc + ac – a – ab – 2bc =
 |

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**Solutions: Collecting like terms with more than one variable**

|  |  |  |
| --- | --- | --- |
| Green1. a + b + a + b = 2a + 2b
2. 3a + b + a + 2b = 4a + 3b
3. f + g + 2f + g = 3f + 2g
4. 3h + i + h + i = 4h + 2i
5. 2p + 2q + p + q = 3p + 3q
6. a + b + c + a + b + c + a + b + c = 2a + 2b + 2c
7. 9f + g + h + f = 10f + g + h
8. 10g + 2h + 5g + 4h = 15g + 6h
9. 30t + 3u + 10t + 7u = 40t + 10u
10. 2x + 3y + 2z + x + 3y + 3z = 3x + 6y + 5z
 | Amber1. 5a + b – a + b = 4a + 2b
2. 3y + 4a – y – a = 2y + 3a
3. 5f + 4g – 2f – 2g = 3f + 2g
4. 2a + 2b + 2c – a – b – c = a + b + c
5. 4x + 5y + 6z – 4y – 4x + z = y + 7z
6. 3r + 4s – r – 2s = 2r + 2s
7. 7w – 2d + w + 4d = 8w + 2d
8. 3q – 4g + q + 9g = 4q + 5g
9. 4r – 5g + r + 10g = 5r + 5g
10. 8t – a – b – t = 7t – a - b
 | Red1. 4a + b – 5a = -a + b
2. 6k + 3p – 8k = -2k + 3p
3. 3e + 5f + e – 10f = 4e – 5f
4. -4e – 5f – 6e -7f = -10e – 12f
5. ab + c + ab + 2c = 2ab + 3c
6. 3ab + 3f – ab + f = 2ab + 4f
7. 3ab + 2gh + 5ab – 4gh = 8ab – 2gh
8. 3ab + 2bc – ac + 2ab + ac = 5ab + 2bc
9. –xy + 3y + 4xy – y = 3xy + 2y
10. a + b + c + ab + bc + ac – a – ab – 2bc = 2a + b + c –bc + ac
 |

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