# 2.5 Simplifying and Collecting Like Terms: Test Pack

Calculators not allowed · about 55 minutes

Name: _____ Date: ____ / ____ / _____

**Answer ALL questions. Show all your working.**

**1** Write down whether each pair of terms is like terms or not. State yes or no.

**(a)** 3x and -7x **(1)**

**(b)** 5ab and 2ba **(1)**

**(c)** $4x^2$ and -x **(1)**

**(d)** 7y and 7 **(1)**

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**2** Expand and then simplify the expression where the bracket has two terms multiplied by a number.

**(a)** Simplify 3( x + 2 ) **(2)**

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**3** Collect like terms and simplify each expression with two different variables.

**(a)** Simplify 4x + 3y + 2x - y **(3)**


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**4** A small puzzle: simplify and then evaluate when x = 2.

**(a)** Simplify 2x + 3x - 4 and then find its value when x = 2 **(3)**

.....

**5** Write each of these in a simpler form, without multiplication or division signs where possible.

(a) 2 x (a + b)

(b) 2 x a x a x a

**(2)**

**6** Is -6p + 8q + 1 an expression, an equation or a formula? Give a reason.

.....

.....

**(2)**

**7** Simplify $9b^2$ x 3ba.

**(2)**

**8** Simplify -2p + 7 + 3p + 7z - 7.

**(3)**


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**9** Here is an expression: -6y + 5m - 1

(a) How many terms does it have?

(b) Write down the coefficient of y.

**(2)**

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**10** Simplify 5a x 2a.

**(2)**

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**11** Write each of these in a simpler form, without multiplication or division signs where possible.

(a) 7 x y x y x y

(b) y ÷ 7

**(2)**

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**12** Simplify $6q^2 + 7q - q^2 - 2q$.

**(3)**


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**13** Multiply out the brackets where the brackets contain a single term.

**(a)** Simplify 5(2x) **(1)**

**(b)** Simplify -3(4y) **(1)**

**(c)** Simplify 2(-3a) **(1)**

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**14** Write each of these in a simpler form, without multiplication or division signs where possible.

(a) 6 x y x y x y

(b) y + y + y

**(2)**

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**15** Simplify 5q x 5q.

**(2)**

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**16** Expand and simplify 2(x + 5).

**(2)**


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**17** Stretch. Simplify fully, showing each step clearly: 6(x + 3) - 2(2x - 5) + 4.

**(4)**

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**18** Simplify 5x + 2x.

**(1)**


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# Mark scheme · 2.5 Simplifying and Collecting Like Terms: Test Pack

## Question 1

| | |
|---|---|
| (a) Yes, both have the same letter part x | B1 |
| (a) Answer: **Yes** | |
| (b) Yes, ab and ba are the same product of variables | B1 |
| (b) Answer: **Yes** | |
| (c) No, $x^2$ and x are different powers | B1 |
| (c) Answer: **No** | |
| (d) No, one has variable y and the other is a constant | B1 |
| (d) Answer: **No** | |

## Question 2

| | |
|---|---|
| (a) multiply both terms by 3: 3x + 6 | M1 |
| (a) 3x + 6 cao | A1 |
| (a) Answer: **3x + 6** | |

## Question 3

| | |
|---|---|
| (a) collect x terms: 4x + 2x and y terms: 3y - y | M1 |
| (a) compute: 6x and 2y | M1 |
| (a) 6x + 2y cao | A1 |
| (a) Answer: **6x + 2y** | |

## Question 4

| | |
|---|---|
| (a) collect like terms to get 5x - 4 | M1 |
| (a) substitute x = 2 to get 5*2 - 4 | M1 |
| (a) 6 cao | A1 |
| (a) Answer: **6** | |

## Question 5

| | |
|---|---|
| (a) 2(a + b) | B1 |
| (b) $2a^3$ | B1 |
| Answer: **(a) 2(a + b), (b) $2a^3$** | |

## Question 6

| | |
|---|---|
| Expression | B1 |
| reason: no equals sign | B1 |
| Answer: **Expression, because it has no equals sign** | |

## Question 7

| | |
|---|---|
| multiplies (or divides) the numbers correctly or the letters correctly | M1 |
| $27b^3a$ cao | A1 |
| Answer: **$27b^3a$** | |

## Question 8

| | |
|---|---|
| collects at least one pair of like terms correctly | M1 |
| collects a second set of like terms correctly | M1 |
| p + 7z cao | A1 |
| Answer: **p + 7z** | |

## Question 9

| | |
|---|---|
| (a) 3 | B1 |
| (b) -6 | B1 |
| Answer: **(a) 3, (b) -6** | |

## Question 10

| | |
|---|---|
| multiplies (or divides) the numbers correctly or the letters correctly | M1 |
| $10a^2$ cao | A1 |
| Answer: **$10a^2$** | |

## Question 11

| | |
|---|---|
| (a) $7y^3$ | B1 |
| (b) y/7 | B1 |
| Answer: **(a) $7y^3$, (b) y/7** | |

## Question 12

| | |
|---|---|
| collects at least one pair of like terms correctly | M1 |
| collects a second set of like terms correctly | M1 |
| $5q^2$ + 5q cao | A1 |
| Answer: **$5q^2$ + 5q** | |

## Question 13

| | |
|---|---|
| (a) 10x cao | B1 |
| (a) Answer: **10x** | |
| (b) -12y cao | B1 |
| (b) Answer: **-12y** | |
| (c) -6a cao | B1 |
| (c) Answer: **-6a** | |

## Question 14

| | |
|---|---|
| (a) $6y^3$ | B1 |
| (b) 3y | B1 |
| Answer: **(a) $6y^3$, (b) 3y** | |

## Question 15

| | |
|---|---|
| multiplies (or divides) the numbers correctly or the letters correctly | M1 |
| $25q^2$ cao | A1 |
| Answer: **$25q^2$** | |

## Question 16

| | |
|---|---|
| expands the bracket correctly, e.g. 2x + 10 | M1 |
| 2x + 10 cao | A1 |
| Answer: **2x + 10** | |

## Question 17

| | |
|---|---|
| expands the first bracket correctly, e.g. 6x + 18 | M1 |
| expands the second bracket correctly, keeping the sign, e.g. -4x + 10 | M1 |
| collects the x terms and constants correctly | M1 |
| 2x + 32 cao | A1 |
| Answer: **2x + 32** | |

## Question 18

| | |
|---|---|
| 7x cao | B1 |
| Answer: **7x** | |


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