



## UNDERSTANDING ALGEBRA

### COLLECTING LIKE TERMS: COMBINED VARIABLES

Ref: G213. **3S1**

<b>A1</b> Simplify: $3a^2 + 5a^2$	<b>A2</b> Simplify: $5a^2 + 2a^2 + a^2$	<b>A3</b> Simplify: $2a^2 - a^2$	<b>A4</b> Simplify: $5a^2 + a - 3a^2 + a$
<b>B1</b> Simplify: $2bc + b + c + bc$	<b>B2</b> Simplify: $5bc + 4b - 3bc - 2b$	<b>B3</b> Simplify: $6bc + c + b - bc$	<b>B4</b> Simplify: $3bc + c + 2c + cb$
<b>C1</b> Simplify: $4d^2 + 3d + 2d^2 + d^3$	<b>C2</b> Simplify: $2d^2 + d + 2e^2 + d^2$	<b>C3</b> Simplify: $3d + d^2 + d^2 + 3d$	<b>C4</b> Simplify: $d^2 + e^2 + e^2 + d$
<b>D1</b> Simplify: $5fg + g + g^2 - fg$	<b>D2</b> Simplify: $f^2 + fg + g^2 + gf + f^2$	<b>D3</b> Simplify: $2gf + 3fg + f^2 - fg$	<b>D4</b> Simplify: $3f^2 + g^2 + f^2 + g$
<b>E1</b> Simplify: $pq + 2qr + 2qp - rq$	<b>E2</b> Simplify: $qr + rq + qr + rp$	<b>E3</b> Simplify: $rp + pq + qr + qp + pqr$	<b>E4</b> Simplify: $pqr + qrs + rsq + qrp$



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### COLLECTING LIKE TERMS: COMBINED VARIABLES

Ref: G213. **3S1**

<p><b>A1</b> Simplify:</p> $\underline{3a^2 + 5a^2}$ $8a^2$	<p><b>A2</b> Simplify:</p> $\underline{5a^2 + 2a^2 + a^2}$ $8a^2$	<p><b>A3</b> Simplify:</p> $\underline{2a^2 - a^2}$ $a^2$	<p><b>A4</b> Simplify:</p> $\underline{5a^2 + a - 3a^2 + a}$ $2a^2 + 2a$
<p><b>B1</b> Simplify:</p> $\underline{2bc + b + c + bc}$ $3bc + b + c$	<p><b>B2</b> Simplify:</p> $\underline{5bc + 4b - 3bc - 2b}$ $2bc + 2b$	<p><b>B3</b> Simplify:</p> $\underline{6bc + c + b - bc}$ $5bc + b + c$	<p><b>B4</b> Simplify:</p> $\underline{3bc + c + 2c + bc}$ $4bc + 3c$
<p><b>C1</b> Simplify:</p> $\underline{4d^2 + 3d + 2d^2 + d^3}$ $6d^2 + 3d + d^3$	<p><b>C2</b> Simplify:</p> $\underline{2d^2 + d + 2e^2 + d^2}$ $3d^2 + d + 2e^2$	<p><b>C3</b> Simplify:</p> $\underline{3d + d^2 + d^2 + 3d}$ $6d + 2d^2$	<p><b>C4</b> Simplify:</p> $\underline{d^2 + e^2 + e^2 + d}$ $d^2 + 2e^2 + d$
<p><b>D1</b> Simplify:</p> $\underline{5fg + g + g^2 - fg}$ $4fg + g + g^2$	<p><b>D2</b> Simplify:</p> $\underline{f^2 + fg + g^2 + fg + f^2}$ $2f^2 + 2fg + g^2$	<p><b>D3</b> Simplify:</p> $\underline{2fg + 3fg + f^2 - fg}$ $4fg + f^2$	<p><b>D4</b> Simplify:</p> $\underline{3f^2 + g^2 + f^2 + g}$ $4f^2 + g^2 + g$
<p><b>E1</b> Simplify:</p> $\underline{pq + 2qr + 2pq - qr}$ $3pq + qr$	<p><b>E2</b> Simplify:</p> $\underline{qr + qr + qr + pr}$ $3qr + pr$	<p><b>E3</b> Simplify:</p> $\underline{pr + pq + qr + pq + pqr}$ $pr + 2pq + qr + pqr$	<p><b>E4</b> Simplify:</p> $\underline{pqr + qrs + qrs + pqr}$ $2pqr + 2qrs$