SUBSTITUTION
MULTIPLE VARIABLES

NO CALCULATOR

Ref: G212. 2E1

A1 If $w = 6$, $x = 4$ and $y = 11$ Find the value of $wx + xy + wy$	**A2** If $w = 5$, $x = 10$ and $y = 6$ Find the value of $w(x + y) + x(y - w)$	**A3** If $w = 2$, $x = 3$ and $y = 2$ Find the value of $xy(wx - wy)$	**A4** If $w = 5$, $x = 10$ and $y = 2$ Find the value of $wxy(x - y - w)$
B1 If $w = 10$, $x = 2$ and $y = 7$ Find the value of $w^2 + x^2 - y^2$	**B2** If $w = 3$, $x = 9$ and $y = 2$ Find the value of $w^2x + xy^2 + w^2y^2$	**B3** If $w = 2$, $x = 4$ and $y = 5$ Find the value of $wx^2y - w^2xy$	**B4** If $w = 6$, $x = 2$ and $y = 1$ Find the value of $wx^2(x + y)^2$
C1 If $w = 3$, $x = 5$ and $y = 7$ Find the value of $\frac{w + x + y}{wxy}$	**C2** If $w = 3$, $x = 6$ and $y = 9$ Find the value of $\frac{w}{x} + \frac{w}{y} + \frac{w}{w}$	**C3** If $w = 2$, $x = 10$ and $y = 5$ Find the value of $\frac{w}{x} + \frac{x}{y} + \frac{y}{w}$	**C4** If $w = 7$, $x = 5$ and $y = 3$ Find the value of $\frac{(w - x) + (w - y)}{(x - y)}$
D1 If $w = 4$, $x = 11$ and $y = 9$ Find the value of $\frac{2wx}{x - y}$	**D2** If $w = 10$, $x = 12$ and $y = 6$ Find the value of $\frac{x^2y}{4x - y^2}$	**D3** If $w = 2$, $x = 3$ and $y = 5$ Find the value of $\frac{y^2 - x^2}{(wx)^2}$	**D4** If $w = 4$, $x = 6$ and $y = 7$ Find the value of $\frac{x^2 - (y - w)^2}{2(w^2 - 1)}$
E1 If $w = 5$, $x = 8$ and $y = 3$ Find the value of $\frac{w + (x^2 - 4wy)}{3wy}$	**E2** If $w = 8$, $x = 5$ and $y = 12$ Find the value of $\frac{xy}{3} + w^2 - 2y$	**E3** If $w = 4$, $x = 4$ and $y = 6$ Find the value of $\frac{wx}{y - w} + (2y)^2$	**E4** If $w = 6$, $x = 2$ and $y = 5$ Find the value of $3w + y^2 + 3(y - x)$

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A1 If $w = 6$, $x = 4$ and $y = 11$ Find the value of $wx + xy + wy$ $6 \times 4 + 4 \times 11 + 6 \times 11 = 134$	**A2** If $w = 5$, $x = 10$ and $y = 6$ Find the value of $w(x + y) + x(y - w)$ $5 \times (10 + 6) + 10 \times (6 - 5) = 90$	**A3** If $w = 2$, $x = 3$ and $y = 2$ Find the value of $xy(wx - wy)$ $3 \times 2 \times (2 \times 3 - 2 \times 2) = 12$	**A4** If $w = 5$, $x = 10$ and $y = 2$ Find the value of $wxy(x - y - w)$ $5 \times 10 \times 2 \times (10 - 2 - 5) = 300$
B1 If $w = 10$, $x = 2$ and $y = 7$ Find the value of $w^2 + x^2 - y^2$ $10^2 + 2^2 - 7^2 = 55$	**B2** If $w = 3$, $x = 9$ and $y = 2$ Find the value of $w^2x + xy^2 + w^2y^2$ $3^2 \times 9 + 9 \times 2^2 + 3^2 \times 2^2 = 153$	**B3** If $w = 2$, $x = 4$ and $y = 5$ Find the value of $wx^2y - w^2xy$ $2 \times 4^2 \times 5 - 2^2 \times 4 \times 5 = 80$	**B4** If $w = 6$, $x = 2$ and $y = 1$ Find the value of $wx^2(x + y)^2$ $6 \times 2^2 \times (2 + 1)^2 = 216$
C1 If $w = 3$, $x = 5$ and $y = 7$ Find the value of $\frac{3+5+7}{3 \times 5 \times 7} = \frac{15}{105} = \frac{1}{7}$	**C2** If $w = 3$, $x = 6$ and $y = 9$ Find the value of $\frac{3}{6} + \frac{3}{9} + \frac{3}{3} = 1\frac{5}{6}$	**C3** If $w = 2$, $x = 10$ and $y = 5$ Find the value of $\frac{2}{10} + \frac{10}{5} + \frac{5}{2} = 4\frac{7}{10}$	**C4** If $w = 7$, $x = 5$ and $y = 3$ Find the value of $\frac{(7-5)+(7-3)}{(5-3)} = 3$
D1 If $w = 4$, $x = 11$ and $y = 9$ Find the value of $\frac{2wx}{x-y}$ $\frac{2 \times 4 \times 11}{11-9} = 44$	**D2** If $w = 10$, $x = 12$ and $y = 6$ Find the value of $\frac{x^2y}{4x-y^2}$ $\frac{12^2 \times 6}{4 \times 12 - 6^2} = 72$	**D3** If $w = 2$, $x = 3$ and $y = 5$ Find the value of $\frac{y^2-x^2}{(wx)^2}$ $\frac{5^2-3^2}{(2 \times 3)^2} = \frac{4}{9}$	**D4** If $w = 4$, $x = 6$ and $y = 7$ Find the value of $\frac{6^2-(7-4)^2}{2 \times (4^2-1)} = \frac{9}{10}$
E1 If $w = 5$, $x = 8$ and $y = 3$ Find the value of $\frac{5+(8^2-4 \times 5 \times 3)}{3 \times 5 \times 3} = \frac{1}{5}$	**E2** If $w = 8$, $x = 5$ and $y = 12$ Find the value of $\frac{5 \times 12}{3} + 8^2 - 2 \times 12 = 60$	**E3** If $w = 4$, $x = 4$ and $y = 6$ Find the value of $\frac{4 \times 4}{6-4} + (2 \times 6)^2 = 72$	**E4** If $w = 6$, $x = 2$ and $y = 5$ Find the value of $3w + y^2 + 3(y - x)$ $3 \times 6 + 5^2 + 3 \times (5 - 2) = 52$