Graphical Intersection.

Simultaneous Linear Equations.

Plot each set of linear equations using the "x = 0, y = 0" method, and solve them.

1). $2x + 3y = 24$
$x + 2y = 14$

2). $x + y = 8$
$x + 2y = 14$

3). $3x + 2y = 18$
$3x + 4y = 24$

4). $2x + y = 11$
$3x - 2y = 6$

5). $3x + 2y = 16$
$2x + y = 9$

6). $2x + 5y = 17$
$5x + y = 31$

7). $x + y = 5$
$3x + y = 9$

8). $x + y = 6$
$2x + y = 10$

9). $x - y = 2$
$2x - y = 6$

10). $y - 2x = 5$
$y - 3x = 2$

11). $2x - y = 10$
$x + 3y = 12$

12). $4x - y = 1$
$x + 2y = 16$

13). $3x + y = 10$
$4x + y = 13$

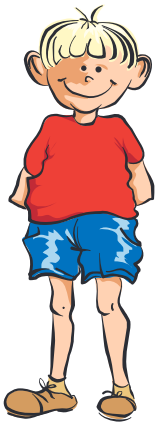
14). $2x + y = 9$
$3x + 2y = 14$

15). $3x + y = 11$
$x + 2y = 7$

16). $3x - y = 8$
$x - 2y = 1$

17). $y - x = 7$
$y - 4x = 1$

18). $y - 3x = 1$
$2y - x = 12$



19). $3x + 40y = 26$
$2x + 10y = 9$

20). $2x + 3y = 9$
$4x - 2y = 2$

21). $2x + 4y = 16$
$5x + 2y = 20$

22). $2y - 3x = 2$
$4y + 3x = 13$

23). $x + 4y = 11$
$5x + 6y = 13$

24). $8y + x = 6$
$3y - 2x = 7$

25). $2x - 3y = 15$
$x - 4y = 10$

26). $2x - 4y = 10$
$3x + 2y = 7$

27). $2x - 3y = 12$
$4y + 5x = 7$

28). $2y - 3x = 4$
$x - 4y = 2$

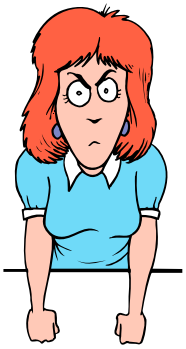
29). $2x - y = 4$
$-x - y = 7$

30). $2x + 5y = -10$
$4x + 3y = -13$

Quadratic Equations.

1). Plot the equation $y = x^2 - 3x$ for $-2 \le x \le 5$. Use this graph to solve

a). $x^2 - 3x = 0$ b). $x^2 - 3x = 2$ c). $x^2 - 3x = -1$.



2). Plot the equation $y = x^2 - 2x$ for $-3 \le x \le 5$. Use this graph to solve

a). $x^2 - 2x = 0$ b). $x^2 - 2x = 10$ c). $x^2 - 2x = 5$.

3). Plot the equation $y = x^2 - x$ for $-3 \le x \le 4$. Use this graph to solve

a). $x^2 - x = 0$ b). $x^2 - x = 2$ c). $x^2 - x = x$ d). $x^2 - x = x + 1$.

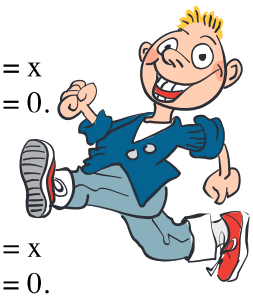
4). Plot the equation $y = 2 - x^2$ for $-3 \le x \le 3$. Use this graph to solve

a). $2 - x^2 = 0$ b). $2 - x^2 = -4$ c). $2 - x^2 = x$ d). $2 - x^2 = -x$.

Licensed to The Royal Grammar School, High Wycombe

5). Plot the equation $y = x^2 - 5x + 4$ for $-1 \le x \le 6$. Use this graph to solve

a). $x^2 - 5x + 4 = 0$ b). $x^2 - 5x + 4 = 4$ c). $x^2 - 5x + 4 = x$
d). $x^2 - 5x + 4 = x + 1$ e). $x^2 - 5x + 3 = 0$ f). $x^2 - 5x + 6 = 0$.



6). Plot the equation $y = x^2 - 6x + 9$ for $0 \le x \le 6$. Use this graph to solve

a). $x^2 - 6x + 9 = 0$ b). $x^2 - 6x + 9 = 6$ c). $x^2 - 6x + 9 = x$
d). $x^2 - 6x + 9 = x - 2$ e). $x^2 - 6x + 5 = 0$ f). $x^2 - 6x + 7 = 0$.

7). Plot the equation $y = x^2 - 7x + 10$ for $0 \le x \le 7$. Use this graph to solve

a). $x^2 - 7x + 10 = 0$ b). $x^2 - 7x + 10 = 5$ c). $x^2 - 7x + 10 = x$
d). $x^2 - 7x + 10 = x - 3$ e). $x^2 - 7x + 7 = 0$ f). $x^2 - 7x + 12 = 0$.

8). Plot the equation $y = x^2 - 2x - 8$ for $-3 \le x \le 5$. Use this graph to solve

a). $x^2 - 2x - 8 = 0$ b). $x^2 - 2x - 8 = -6$ c). $x^2 - 2x - 8 = 0.5x$
d). $x^2 - 2x - 8 = -2x - 3$ e). $x^2 - 2x - 9 = 0$ f). $x^2 - 2x = 0$.

9). Plot the equation $y = 2x^2 - 9x + 4$ for $-1 \le x \le 5$. Use this graph to solve

a). $2x^2 - 9x + 4 = 0$ b). $2x^2 - 9x + 4 = -5$ c). $2x^2 - 9x + 4 = -x$
d). $2x^2 - 9x + 4 = -x + 3$ e). $2x^2 - 9x + 2 = 0$ f). $2x^2 - 7x + 5 = 0$.

10). Plot the equation $y = x^2 + 2x - 3$ for $-5 \le x \le 3$. Use this graph to solve

a). $x^2 + 2x - 3 = 0$ b). $x^2 + 2x - 3 = 4$ c). $x^2 + 2x - 3 = x$
d). $x^2 - 2x - 3 = -0.5x$ e). $x^2 + 2x - 4 = 0$ f). $x^2 + x - 3 = 0$.

11). Plot the equation $y = x^2 - 2x + 4$ for $-3 \le x \le 5$. Use this graph to solve

a). $x^2 - 2x + 4 = 6$ b). $x^2 - 2x + 4 = 10$ c). $x^2 - 2x + 4 = 3x$
d). $x^2 - 2x + 4 = -x + 4$ e). $x^2 - 2x + 1 = 0$ f). $x^2 - 4 = 0$.

12). Plot the equation $y = 2 + x - x^2$ for $-3 \le x \le 4$. Use this graph to solve

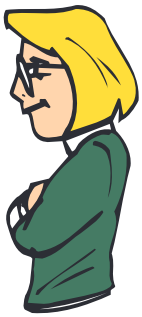
a). $2 + x - x^2 = 0$ b). $2 + x - x^2 = -4$ c). $2 + x - x^2 = x$
d). $2 + x - x^2 = -x + 2$ e). $8 + x - x^2 = 0$ f). $-x - x^2 = 0$.

13). Plot the equation $y = x^2 + 3x - 7$ for $-5 \le x \le 2$. Use this graph to solve

a). $x^2 + 3x - 7 = 0$ b). $x^2 + 3x - 7 = -4$ c). $x^2 + 3x - 7 = x$
d). $x^2 + 3x - 7 = -x - 2$ e). $x^2 + 3x = 0$ f). $x^2 + x - 2 = 0$.

14). Plot the equation $y = x^2 - 5x + 2$ for $-1 \le x \le 6$. Use this graph to solve

a). $x^2 - 5x + 2 = 0$ b). $x^2 - 5x + 2 = -3$ c). $x^2 - 5x + 2 = -x$
d). $x^2 - 5x + 2 = x - 4$ e). $x^2 - 5x = 0$ f). $x^2 - 3x = 0$.

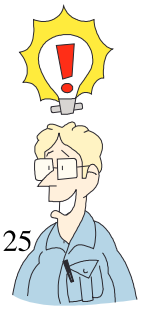


15). Plot the equation $y = -x^2 + 6x - 5$ for $0 \le x \le 6$. Use this graph to solve

a). $-x^2 + 6x - 5 = 0$ b). $-x^2 + 6x - 5 = 3.5$ c). $-x^2 + 6x - 5 = x$
d). $-x^2 + 6x - 5 = -x + 5$ e). $-x^2 + 6x - 7 = 0$ f). $-x^2 + 5x - 4 = 0$.

Licensed to The Royal Grammar School, High Wycombe

Simultaneous Linear Equations (Elimination).



Solve the following simultaneous linear equations.

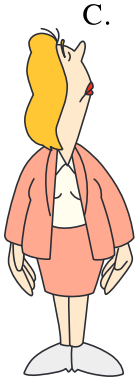
A.

1).	$3x + y = 7$ $2x + y = 6$	2).	$2x + y = 21$ $x - y = 6$	3).	$5x + y = 28$ $x - y = 2$	4).	$3x + y = 25$ $x - y = 3$
5).	$x + 9y = 13$ $x + 3y = 7$	6).	$x + 5y = 21$ $x + 2y = 12$	7).	$x + 6y = 20$ $x + 3y = 11$	8).	$x + 5y = 11$ $x + 4y = 10$
9).	$x + y = 7$ $2x - y = 2$	10).	$x + y = 11$ $5x - y = 25$	11).	$x + 8y = 26$ $x + y = 5$	12).	$x + 5y = 25$ $x + 3y = 17$
13).	$4x + y = 19$ $x + y = 10$	14).	$x + 5y = 15$ $x + y = 7$	15).	$4x + y = 23$ $3x + y = 18$	16).	$x + 6y = 17$ $x + 2y = 9$
17).	$g + h = 6$ $-g + 3h = 10$	18).	$a + 4b = 18$ $-a + 7b = 15$	19).	$2f + g = 13$ $6f - g = 3$	20).	$p + 6q = 16$ $p + 2q = 8$

B.

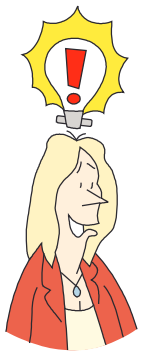
1).	$3x + 4y = 20$ $2x + y = 10$	2).	$5x + 2y = 16$ $4x + y = 11$	3).	$3x + 2y = 16$ $2x + y = 9$	4).	$5x + 4y = 23$ $3x + y = 11$
5).	$3x + y = 13$ $5x - 2y = 7$	6).	$2x + y = 11$ $3x - 2y = 6$	7).	$x + y = 7$ $11x - 4y = 2$	8).	$6x + y = 20$ $4x - 3y = 6$
9).	$5x + 3y = 14$ $x + 2y = 7$	10).	$3x + 4y = 24$ $x + 5y = 19$	11).	$2x + 5y = 16$ $x + 3y = 9$	12).	$3x + 2y = 17$ $x + 3y = 15$
13).	$x + 4y = 6$ $-4x + 9y = 1$	14).	$x + 3y = 10$ $-2x + 5y = 2$	15).	$x + 5y = 16$ $-2x + 3y = 7$	16).	$x + 4y = 22$ $-4x + 5y = 17$
17).	$3x + 2y = 13$ $2x - y = 4$	18).	$4x + 3y = 17$ $3x - y = 3$	19).	$3x + 2y = 16$ $x - y = 2$	20).	$10x + 3y = 19$ $5x - y = 2$
21).	$2x + 5y = 31$ $x + 6y = 33$	22).	$2x + 3y = 16$ $3x + y = 17$	23).	$3x + 4y = 25$ $x + 2y = 11$	24).	$6x + 5y = 23$ $2x + y = 7$
25).	$5t + 2u = 33$ $-t + 5u = 15$	26).	$2p + 11q = 34$ $-p + 7q = 8$	27).	$3r + 4t = 10$ $2r - t = 3$	28).	$6n + 5m = 32$ $3n + m = 10$

C.



1).	$2x + 3y = 9$ $5x + 4y = 19$	2).	$2x + 5y = 16$ $3x + 4y = 17$	3).	$5x + 2y = 31$ $2x + 3y = 19$	4).	$3x + 5y = 25$ $2x + 3y = 16$
5).	$4x + 3y = 15$ $5x - 4y = 11$	6).	$3x + 2y = 14$ $13x - 5y = 6$	7).	$3x + 2y = 13$ $5x - 3y = 9$	8).	$2x + 5y = 16$ $3x - 2y = 5$
9).	$3x + 4y = 14$ $-2x + 5y = 6$	10).	$5x + 6y = 17$ $-4x + 5y = 6$	11).	$2x + 5y = 13$ $-3x + 16y = 4$	12).	$2x + 7y = 25$ $-5x + 8y = 14$

Licensed to The Royal Grammar School, High Wycombe



13). $2y + 5x = 31$, $7y - 2x = 11$

14). $2y + 3x = 18$, $9y - 4x = 11$

15). $5y + 3x = 11$, $7y - 2x = 3$

16). $2y + 3x = 13$, $7y - 2x = 8$

17). $3x + 4y = 25$, $5x + 3y = 27$

18). $3y + 4x = 16$, $4y + 5x = 21$

19). $2x + 3y = 11$, $16x - 5y = 1$

20). $3y + 2x = 15$, $7y - 5x = 6$

21). $9x + 3y = 30$, $5x - 2y = 2$

22). $3x + 5y = 22$, $2x + 7y = 22$

23). $4x + 3y = 22$, $3x - 4y = 4$

24). $3x + 5y = 19$, $2x + 7y = 20$

25). $4d + 3e = 32$, $5d + 2e = 33$

26). $2u + 7v = 17$, $3u + 5v = 20$

27). $2a + 3b = 16$, $3a + 4b = 23$

28). $5q + 7r = 24$, $2q + 3r = 10$

D.

1). $4x + y = 15$, $3x + y = 8$

2). $9x + y = 14$, $7x + y = 8$

3). $3x + y = 24$, $x + y = 6$

4). $6x + y = -46$, $x + y = -6$

5). $3x + y = -7$, $8x + y = -7$

6). $x + y = -15$, $2x + y = -8$

7). $x + 6y = 21$, $x + 9y = 9$

8). $x + 5y = 2$, $x + 3y = -4$

9). $x + y = 51$, $x + 8y = 9$

10). $x + 9y = 53$, $x + 3y = 5$

11). $x + 9y = 28$, $x + 5y = 0$

12). $x + y = -10$, $x + 3y = 0$

13). $-2x + y = -15$, $8x + y = -5$

14). $-3x + y = 30$, $x + y = 10$

15). $-9x + y = -39$, $2x + y = -6$

16). $-x + y = 2$, $4x + y = -3$

17). $6c + d = -9$, $c + d = -4$

18). $9g + h = -12$, $-g + h = -2$

19). $8a + b = -13$, $a + b = -6$

20). $n - 7m = 2$, $n - 8m = 3$

E.

1). $x - 7y = 23$, $3x + 9y = 9$

2). $x + 8y = 26$, $5x + 9y = 6$

3). $9x + 9y = 36$, $5x + 8y = 11$

4). $7x - y = 1$, $8x + 5y = -5$

5). $2x + 6y = -4$, $8x + 5y = 3$

6). $8x + 3y = 23$, $6x + 5y = 9$

7). $y - 2x = -11$, $6y + 2x = -10$

8). $9x - 6y = -66$, $7x - 7y = 7$

9). $2x - 5y = 7$, $-2x + 8y = -10$

10). $-5x + 6y = 44$, $9x + 7y = -8$

11). $6x - 8y = 108$, $7x + 2y = -10$

12). $8x + 3y = -17$, $2x + y = -7$

13). $-9x + 3y = 3$, $x + y = -3$

14). $x + 2y = -13$, $-x + 3y = -2$

15). $5x + 9y = -37$, $-8x + 4y = 4$

16). $9x + 5y = -118$, $-3x + 2y = -1$

17). $2p - 8q = -2$, $5p - 6q = -5$

18). $2j - 2k = 8$, $7j - 5k = 12$

19). $8w + 5v = -15$, $9w + 2v = -6$

20). $5a + b = 38$, $2a + 4b = 8$

F.

1). $4x - 5y = 5$, $2x - 3y = 2$

2). $6x - 2y = 9$, $3x + 4y = 12$

3). $6x - 5y = -7$, $3x + 4y = 16$

4). $3y - 4x = 1$, $6y - 6x = 5$

5). $4x + 3y = 4$, $2x - 5y = 15$

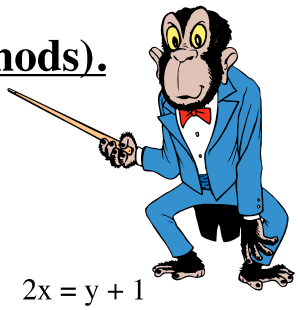
6). $4x + 2y = -8$, $6x - 2y = -27$

7). $8m + 4n = 7$, $6m - 8n = 41$

8). $5a + 10b = 28$, $15a - 20b = -121$

Licensed to The Royal Grammar School, High Wycombe

Simultaneous Linear Equations (Other Methods).



Elimination after Rearranging.

Rearrange these equations then solve using elimination.

1). $3x + y = 5$, $4x = 2 + y$

2). $8x = 8 - 3y$, $5x = 5 + 3y$

3). $3y = 4x + 5$, $4x + 5y = 19$

4). $2x = y + 1$, $5x + y = 13$

5). $3x = 1 + y$, $5x - y = 3$

6). $x = 2y + 7$, $x - 6y = 3$

7). $5x = 17 - 4y$, $2x + 4y = 8$

8). $9x = -3y$, $5x + 3y + 4 = 0$

9). $9x + 3y = 19$, $6x = 11 + 3y$

10). $2x + y + 2 = 0$, $7x + y - 3 = 0$

11). $3y = 10 + 4x$, $4x = 2y - 8$

12). $7x = 2y + 6$, $10x - 2y = 9$

13). $4x + y = 21$, $3x = 12 + 3y$

14). $8 = 4x + 2y$, $x = 2 - 3y$

15). $7y = 13 - 6x$, $3x = 2y + 1$

16). $2x - 6 = y$, $4x = 22 - 3y$

17). $10y + 26 = 3x$, $6 - 5x = 2y$

18). $3y = 27 - 8x$, $2x = 5y + 1$

19). $5x = 6 + 6y$, $2 + 2y = 10x$

20). $4y + 3 = 5x$, $7x - 2y = 6$

21). $10 - 2a = 4b$, $7b + 3a = 16$

22). $3 + 2u = 10v$, $4v + 3u - 5 = 0$

23). $5q = 12 - 3p$, $4p = 6q - 22$

24). $7f = 9 - 4g$, $3g = 6 - 5f$

25). $3y - 15 = 6x$, $2x = 7 - 2y$

26). $2x = 3 + 6y$, $6y = 2 - 8x$

27). $9x + 4 = -12y$, $3x = 12y + 12$

28). $4x = 10 - 2y$, $x = 8 - 2y$

29). $11t = 9 + 3s$, $7t + 6 = -2s$

30). $6m = 1 - 2n$, $9m - 6 = 6n$

31). $3i = 5 + 8h$, $5i - 9 = 12h$

32). $8y = 7 - 4z$, $6y - 41 = 8z$

Substitution.

A. Solve the following equations by substituting one equation into the other.

1). $y = 2x + 7$, $y = 3x + 3$

2). $y = 4x + 3$, $y = 2x + 11$

3). $y = 5x - 3$, $y = 3x + 7$

4). $y = 4x + 9$, $y = 7x - 6$

5). $y = 4x + 5$, $y = x + 20$

6). $y = 6x - 1$, $y = 4x + 15$

7). $y = x - 2$, $y = \frac{1}{2}x + 4$

8). $y = \frac{1}{3}x + 3$, $y = \frac{2}{3}x - 4$

9). $y = \frac{3}{4}x - 3$, $y = \frac{1}{4}x + 5$

10). $y = 4 - \frac{1}{2}x$, $y = \frac{1}{2}x + 2$

11). $y = 5 - \frac{2}{3}x$, $y = 4 - \frac{1}{3}x$

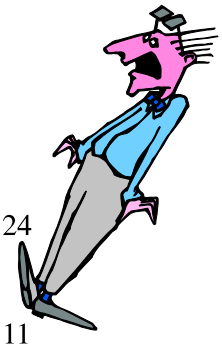
12). $y = 7 - \frac{3}{5}x$, $y = 12 - \frac{4}{5}x$

13). $u = t - 5$, $u = \frac{1}{3}t + 7$

14). $b = \frac{3}{5}a + 19$, $b = a + 1$

15). $q = p - 4$, $q = \frac{2}{7}p + 31$

Licensed to The Royal Grammar School, High Wycombe



B. Solve the following equations by substituting one equation into the other.

1). $y = x + 2$
$2x + 3y = 26$

2). $y = x + 1$
$2x + 2y = 26$

3). $x = y - 3$
$2x + 3y = 24$

4). $x = 2y - 1$
$3x + y = 11$

5). $y = 2x - 1$
$8x + 3y = 11$

6). $x = 8 - 5y$
$3x + 2y = 11$

7). $y = 6 - 2x$
$4x + 3y = 22$

8). $x = 6 - 8y$
$3x + 6y = 9$

9). $x = 5 + 7y$
$2x - 4y = 15$

10). $3x + 2y = 9$
$y = 4 - 2x$

11). $6x - 3y = 39$
$x = y + 7$

12). $2x + y = -13$
$x = 2y + 1$

13). $y = 8 - 2x$
$3x - 2y = 5$

14). $3x - 2y = 7$
$y = 14 - 2x$

15). $3n - 4m = 7$
$m = 45 - 2n$

16). $a = 3b - 12$
$2b - 5a = 8$

17). $x = 6y - 2$
$8y - 3x = 1$

18). $t = 1 - 7s$
$5s - 3t = 10$

C. Rearrange then solve the following equations by substituting one equation into the other.

1). $x - y = 1$
$x + y = 3$

2). $2x - y = 4$
$3x + y = 11$

3). $2x - y = 5$
$x + y = 4$

4). $3x - y = 1$
$x + y = 3$

5). $x - 3y = 6$
$x + 3y = 0$

6). $x + 2y = 3$
$2x + y = 0$

7). $x + y = 1$
$3x - 2y = 8$

8). $3x - 4y = 1$
$y - 2x = 1$

9). $m + 3n = 7$
$4m - 2n = 7$

10). $a + b = 3$
$5a - 5b = 1$

11). $3p + 7q = 11$
$p - q = -4$

12). $2d + e = -8$
$6d - 2e = -27$

Trial and Improvement.

Solve the following simultaneous equations by trying different values.

1). $u + v = 7$
$u - v = 1$

2). $a + b = 7$
$a - b = 3$

3). $m + n = 5$
$m - n = 3$

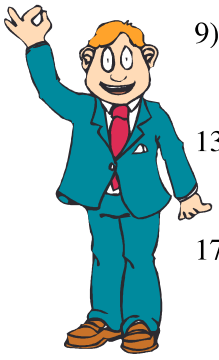
4). $p + q = 9$
$p - q = 5$

5). $a + b = 4$
$a - b = 4$

6). $u + v = 12$
$u - v = 6$

7). $c + d = 9$
$c - d = 7$

8). $h + i = 11$
$h - i = 7$



9). $r + s = 3\frac{1}{2}$
$r - s = \frac{1}{2}$

10). $p + q = 6\frac{1}{3}$
$p - q = 2\frac{1}{3}$

11). $u + v = 5\frac{1}{4}$
$u - v = \frac{3}{4}$

12). $m + n = 7$
$m - n = 2$

13). $p + q = 2$
$p - q = 4$

14). $c + d = 3$
$c - d = 7$

15). $h + i = -3$
$h - i = -7$

16). $g + h = -2$
$g - h = 0$

17). $u + v = -8$
$u - v = 2$

18). $m + n = -6$
$m - n = 6$

19). $r + s = \frac{1}{2}$
$r - s = 2\frac{1}{2}$

20). $a + b = -1$
$a - b = 3\frac{2}{3}$

Licensed to The Royal Grammar School, High Wycombe

Simultaneous Linear Equations (Worded Questions).

Forming Equations.

In the following statements there are two unknowns, x and y.
For each question write <u>two equations</u> in x and y. **Do not solve them**.

1). The sum of two numbers is 21 and the difference is 7.
2). The sum of two numbers is 73 and the difference is 11.
3). Four knives and five forks cost £4.90 in total. Seven knives and three forks cost £5.70 in total. Let the cost of a knife be x and the cost of a fork be y.
4). Five nuts and six bolts have a mass of 162 g. Three nuts and two bolts have a mass of 70 g. Let the mass of a nut be x and the mass of a bolt be y.
5). Two bowler hats and three berets cost £55. Five bowler hats and two berets cost £88. Let the cost of a bowler hat be x and the cost of a beret be y.
6). Edward only has five pence and two pence coins in his pocket. He has ten coins altogether and their total value is 41p. Let the number of five pence coins be x and the number of two pence coins be y.
7). Susan sold 50 tickets for a concert. She sold x £2 tickets and y £5 tickets. She collected £160.
8). Beth and Alex have £1.55 between them. Beth has 15p more than Alex. Let Beth have x p and Alex have y p.
9). Alec and Ulrika have 22 marbles between them. Ulrika has 8 more marbles than Alec. Let Alec have x marbles and Ulrika y marbles.
10). In a netball match between Year 9 and Year 10 there were 34 goals. The Year 10 team won by 6 goals. Let Year 9 goals be x and Year 10 goals be y.
11). Bert and Ernie have a combined age of 22. In four years time Bert will be twice as old as Ernie. Let Bert be x years and Ernie y years.
12). Sarah and Louise have a combined age of 24. Six years ago Sarah was three times as old as Louise. Let Sarah be x years and Louise y years.
13). Jenny and Bill have a combined age of 50. Sixteen years ago Jenny was twice as old as Bill. Let Jenny be x years and Bill y years.
14). Keith thinks of two numbers. When he adds the two numbers he gets 8. When he doubles the first number and takes away treble the second number he gets 1.
15). Lynne thinks of two numbers. When she doubles the first and adds the second number to it she gets 15. When she trebles the first number and takes away double the second number she gets -2 (minus two).

Now go back and solve your equations.

Forming and Solving Equations.

1). Two numbers, x and y, have a sum of 53 and a difference of 11.
   a). Write two equations in x and y.
   b). Solve them to find the values of x and y.
2). Two numbers, p and q, have a sum of 45 and a difference of 19.
   a). Write two equations in p and q.
   b). Solve them to find the values of p and q.
3). John and Andrew have £3.40 between them. John has £1.20 more than Andrew. John has £u and Andrew £v.
   a). Write two equations in u and v.
   b). Solve them to find the values of u and v.

Licensed to The Royal Grammar School, High Wycombe

4). Tessa had £1.00 for snacks. In the school canteen 2 cherry buns and 3 doughnuts cost £1.20. However 4 cherry buns and 1 doughnut cost exactly £1.00.
   a). Write two equations.
   b). Solve them to find the cost of a cherry bun and the cost of a doughnut.

5). Four pigs and three sheep cost a farmer £620. Another farmer pay £630 for three pigs and five sheep.
   a). Write two equations.
   b). Solve them to find the cost of a pig and the cost of a sheep.

6). In a toy box there are blue and green bricks only. Find the weight of each type of brick if 9 blue bricks and 6 green bricks weigh 324 g and 5 blue bricks and 4 green bricks weigh 200 g.

7). John says "I'm thinking of 2 different numbers. When I double the first and add it to the second the total is thirteen. When I double the second and take it away from the first I get minus one." What are the two numbers ?

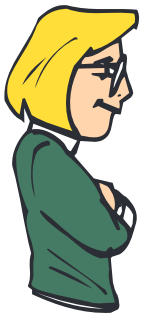
8). Bill sold 75 tickets for a gig. He sold x £5 tickets and y £8 tickets. He collected £444. How many of each type of ticket did he sell ?

9). Three cups and four mugs cost £10.20, whilst two cups and five mugs cost £9.60. Find the price of a cup and the price of a mug.

10). Ben thinks of two numbers. When he doubles the first and adds treble the second number to it he gets 5. When he trebles the first number and takes away double the second number he gets 14. What are the two numbers ?

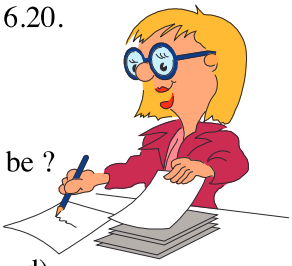
11). The sum of Ann and Fred's ages is 28. In seven years time Ann will be twice as old as Fred. How old are they now ?

12). In a basketball match between the Saints and the Tigers, the Saints won by 21 points. Altogether 125 points were scored. What was the final score ?



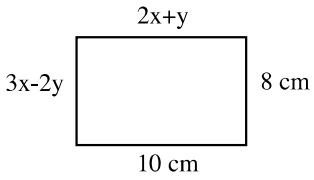
13). On holiday Lisa finds that the cost of two boat trips and five ice creams would be £12.90 and the cost of three boat trips and four ice creams would be £16.20. How much would two boat trips and nine ice creams cost Lisa ?

14). On a bus trip the fare for 5 adults and 8 children was £17.80. The fare for 6 adults and 5 children was £16.30 for the same journey. If a similar trip is made by 4 adults and 7 children what would the cost be ?

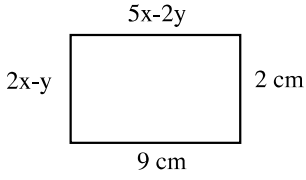


15). Find the values of x and y in each of these rectangles. (Diagrams not to scale).

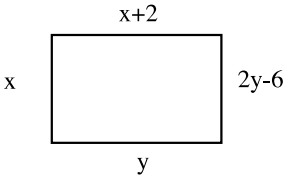
a).



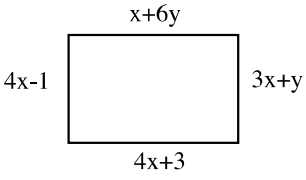
b).



c).

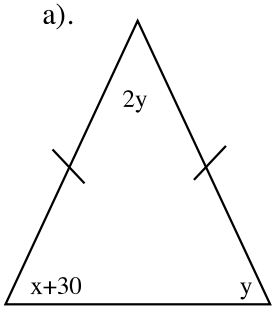


d).

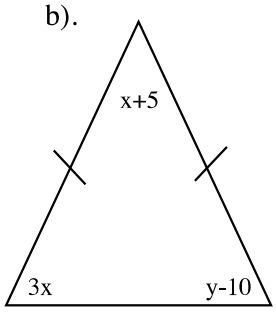


16). Find the values of x and y in each of these **isosceles** triangles. Hence find the size of each angle. (Diagrams not to scale).

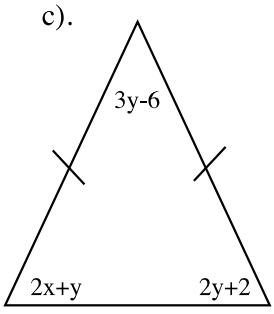
a).



b).



c).



d).