

# MATH141 - Worksheet

## QUADRATIC EQUATIONS - Answers

- |                               |                       |                               |                                         |
|-------------------------------|-----------------------|-------------------------------|-----------------------------------------|
| (a) $x = 3$ or $4$            | (b) $x = 2$ or $8$    | (c) $x = -5$ or $3$           | (d) $x = 7$ or $-3$                     |
| (e) $x = 2$ or $3$            | (f) $x = -1$ or $-18$ | (g) $x = 8$ or $9$            | (h) $x = 0$ or $-5$                     |
| (i) $x = -1$ or $-7$          | (j) $x = 0$ or $-2$   | (k) $x = -8$ or $2$           | (l) $x = \frac{2}{3}$ or $-3$           |
| (m) $x = 3$ or $7$            | (n) $x = 8$ or $-7$   | (o) $x = -\frac{5}{3}$ or $1$ | (p) $x = -\frac{3}{2}$ or $\frac{2}{3}$ |
| (q) $x = -5$ or $\frac{1}{4}$ | (r) $x = -2$ or $2$   | (s) $x = \frac{2}{5}$ or $4$  | (t) $x = -\frac{4}{3}$ or $\frac{3}{4}$ |
| (u) $x = -5$ or $\frac{1}{6}$ | (v) $x = -1$ or $11$  | (w) $x = -4$ or $-1$          | (x) $x = -8$ or $12$                    |
- |                                     |                                     |                                     |                                      |
|-------------------------------------|-------------------------------------|-------------------------------------|--------------------------------------|
| (a) $x = 1 \pm \sqrt{5}$            | (b) $x = -2 \pm 2\sqrt{2}$          | (c) $x = \frac{1 \pm \sqrt{21}}{2}$ | (d) $x = 3 \pm \sqrt{7}$             |
| (e) $\frac{5 \pm \sqrt{21}}{2}$     | (f) $x = -1 \pm \sqrt{3}$           | (g) $x = 3 \pm \sqrt{5}$            | (h) $\frac{-1 \pm \sqrt{5}}{2}$      |
| (i) $x = 3 \pm \sqrt{14}$           | (j) $x = -2 \pm \sqrt{5}$           | (k) $x = 1 \pm \sqrt{6}$            | (l) $x = \frac{-3 \pm \sqrt{33}}{2}$ |
| (m) $x = \frac{1 \pm \sqrt{13}}{2}$ | (n) $x = \frac{3 \pm 3\sqrt{5}}{2}$ | (o) $x = 1$ or $-7$                 | (p) $x = 7$ or $-13$                 |
| (q) $x = 5 \pm \sqrt{26}$           | (r) $x = -1 \pm \sqrt{7}$           | (s) $x = -3 \pm \sqrt{5}$           | (t) $x = -4 \pm \sqrt{7}$            |
| (u) $x = -5 \pm \sqrt{31}$          | (v) $x = 2 \pm \sqrt{7}$            | (w) $x = 14$ or $-2$                | (x) $x = \frac{-3 \pm \sqrt{13}}{2}$ |
- |                             |                             |                             |                             |
|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| (a) $x = 1.851$ or $-1.351$ | (b) $x = 0.781$ or $-1.281$ | (c) $x = 1.847$ or $-0.181$ | (d) $x = 1.535$ or $-0.869$ |
| (e) $x = 2.703$ or $-0.370$ | (f) $x = 3.712$ or $-1.212$ | (g) $x = 1.186$ or $-1.686$ | (h) $x = 1.640$ or $0.610$  |
- |                            |                           |                            |                            |
|----------------------------|---------------------------|----------------------------|----------------------------|
| (a) $x = 4.24$ or $-0.24$  | (b) $x = 1.19$ or $-4.19$ | (c) $x = 7.41$ or $-0.41$  | (d) $x = 1.12$ or $-0.72$  |
| (e) $x = -0.31$ or $-3.19$ | (f) $x = 2.30$ or $-1.30$ | (g) $x = -0.74$ or $-2.26$ | (h) $x = -0.53$ or $-9.47$ |
| (i) $x = 0.76$ or $-0.19$  | (j) $x = 1.15$ or $-0.65$ | (k) $x = 0.35$ or $-2.85$  | (l) $x = -0.15$ or $-2.18$ |
- |                                |                                 |                                         |                                 |
|--------------------------------|---------------------------------|-----------------------------------------|---------------------------------|
| (a) $3 \pm \sqrt{10}$          | (b) $-5 \pm \sqrt{15}$          | (c) $-1 \pm \sqrt{6}$                   | (d) $\frac{7 \pm \sqrt{37}}{2}$ |
| (e) $\frac{3 \pm \sqrt{5}}{4}$ | (f) $x = 1$ or $-\frac{5}{3}$   | (g) $\frac{3 \pm \sqrt{37}}{14}$        | (h) $x = -4$ or $\frac{3}{2}$   |
| (i) $x = -3$ or $\frac{1}{2}$  | (j) $\frac{-4 \pm \sqrt{6}}{5}$ | (k) $x = \frac{2}{3}$ or $-\frac{3}{2}$ | (l) $\frac{1 \pm \sqrt{7}}{3}$  |
- |                              |                               |                               |                                         |
|------------------------------|-------------------------------|-------------------------------|-----------------------------------------|
| (a) $x = 8$ or $-2$          | (b) $x = 4$ or $9$            | (c) $x = 4$ or $-\frac{3}{2}$ | (d) $x = \frac{3}{2}$                   |
| (e) $x = 8$ or $-6$          | (f) $x = 6$ or $-12$          | (g) $x = 6.5$ or $0.5$        | (h) $x = 0.8$ or $-0.4$                 |
| (i) $x = 0$ or $6$           | (j) $x = 1$ or $\frac{5}{2}$  | (k) $x = 7$ or $-3$           | (l) $x = \frac{7}{2}$ or $-\frac{5}{2}$ |
| (m) $x = \frac{1}{2}$ or $5$ | (n) $x = 1$ or $-\frac{5}{2}$ | (o) $x = 0.5$ or $-2.1$       |                                         |