Name:

Date:

School:

Facilitator:

**5.05 Solving Quadratic Equations by Factoring**

**Solve each of the following quadratic equations using the given factors. You should show your work for solving each factor in the given space.**

|  |  |  |  |
| --- | --- | --- | --- |
| 1. | Solve (2*x* + 4)(5*x* – 1) = 0 | Solutions: *x* =  and *x* =  |  |
|  | **Show work for the first factor here:** | **Show work for the second factor here:** |  |
|  |  |  |  |
|  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| 2. | Solve (*x* – 7)(*x* + 4) = 0 | Solutions: *x* =  and *x* =  |  |
|  | **Show work for the first factor here:** | **Show work for the second factor here:** |  |
|  |  |  |  |
|  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| 3. | Solve 6*x*(4*x* + 12) = 0 | Solutions: *x* =  and *x* =  |  |
|  | **Show work for the first factor here:** | **Show work for the second factor here:** |  |
|  |  |  |  |
|  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| 4. | Solve (3*x* – 21)(*x* + 12) = 0 | Solutions: *x* =  and *x* =  |  |
|  | **Show work for the first factor here:** | **Show work for the second factor here:** |  |
|  |  |  |  |
|  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| 5. | Solve (7*x* + 6)(3*x* + 10) = 0 | Solutions: *x* =  and *x* =  |  |
|  | **Show work for the first factor here:** | **Show work for the second factor here:** |  |
|  |  |  |  |
|  |  |

**Solve each quadratic equation by factoring. Show all necessary work and write your solutions in the appropriate blanks.**

|  |  |  |  |
| --- | --- | --- | --- |
| 6. | Solve *x*2 + 9*x* + 18 = 0  | Solutions: *x* =  and *x* =  |  |
|  | **Show your factoring work here:** |  |
|  |  |  |
|  |  |  |  |
|  | **Show your solving work here:** |  |
|  |  |  |
|  |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| 7. | Solve *n*2 – 7*n* + 12 = 0  | Solutions: *n* =  and *n* =  |  |
|  | **Show your factoring work here:** |  |
|  |  |  |
|  |  |  |  |
|  | **Show your solving work here:** |  |
|  |  |  |
|  |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| 8. | Solve *m*2 – 10*m* + 16 = 0  | Solutions: *m* =  and *m* =  |  |
|  | **Show your factoring work here:** |  |
|  |  |  |
|  |  |  |  |
|  | **Show your solving work here:** |  |
|  |  |  |
|  |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| 9. | Solve *x*2 – 36 = 0  | Solutions: *x* =  and *x* =  |  |
|  | **Show your factoring work here:** |  |
|  |  |  |
|  |  |  |  |
|  | **Show your solving work here:** |  |
|  |  |  |
|  |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| 10. | Solve 100*x*2 – 121 = 0  | Solutions: *x* =  and *x* =  |  |
|  | **Show your factoring work here:** |  |
|  |  |  |
|  |  |  |  |
|  | **Show your solving work here:** |  |
|  |  |  |
|  |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| 11. | Solve16*m*2 – 40*m* + 25 = 0  | Solutions: *m* =  and *m* =  |  |
|  | **Show your factoring work here:** |  |
|  |  |  |
|  |  |  |  |
|  | **Show your solving work here:** |  |
|  |  |  |
|  |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| 12. | Solve 3*n*2 – 18*n* – 21 = 0  | Solutions: *n* =  and *n* =  |  |
|  | **Show your factoring work here:** |  |
|  |  |  |
|  |  |  |  |
|  | **Show your solving work here:** |  |
|  |  |  |
|  |  |  |  |

**Answer each of the following questions related to every factoring problem.**

|  |  |
| --- | --- |
| 13. | What are two other names for the solutions to a quadratic equation? |
|  |  |
|  |  |
| 14. | In each of the problems above, you calculate the solution to each problem. On a graph, what does the solution represent? |
|  |  |
|  |  |