

## Summer Packet for Students Entering Algebra II Standard

### Directions:

1. Please complete all questions in the work space provided or on a separate sheet of paper that is clearly and neatly numbered.
2. You must show all of your work for each question. If you are stuck, please use the resource links provided in the section.
3. Your teacher will check this assignment on the FIRST day of school at the beginning of class. This will be your first completion grade so make sure you have attempted each problem.
4. If there are questions that you had a difficult time with, please list them in the box below (or highlight them on a separate sheet of paper). We expect you to use the resources provided if you are stuck, but understand there may be additional support needed for some questions.

### Assessment:

1. On the second day of math, you will have a summative quiz based on the skills on this summer packet.
2. You will get 5 points for bringing your TI-84 CE Plus to class with you on the day of the test. This is a required tool that you will use throughout high school.

### Extra Support:

1. The math department will have extra help days for the summer packet close to the return of school. Please check the school's website during the summer for the dates.
2. On the first day back to school, we will dedicate time in class to go over the answers and for you to ask your teacher questions.

Name \_\_\_\_\_

## CDS SUMMER PACKET: ALGEBRA II STANDARD

**Factor out the Greatest Common Factor (GCF):**

**Stuck? Follow this link:** <https://www.youtube.com/watch?v=-v0-vf0zsMg>  
or <https://www.youtube.com/watch?v=L9BDepyZCms>

1.  $4x - 8$

2.  $3x^2 + 9x$

3.  $2x^4 + 6x^2$

4.  $10x^3y - 2xy^2 + 4xy$

**Factor using the difference of squares method.**

**Stuck? Follow this link:** <https://www.youtube.com/watch?v=wBOou3NBfrI>

5.  $x^2 - 9$

6.  $81x^2 - 25y^2$

7.  $49x^2 - 1$

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**Factor by grouping.**

**Stuck? Follow this link:** [https://www.youtube.com/watch?v=VYUhUeeD\\_Z0](https://www.youtube.com/watch?v=VYUhUeeD_Z0)

8.  $x^3 + 7x^2 - 2x - 14$

9.  $3x^4 - 6x^3 + 12x - 24$

**Factor the trinomial where  $a = 1$**

**Stuck? Follow this link:** <https://www.youtube.com/watch?v=-vSiA1wM-uA>

10.  $x^2 + 3x - 4$

11.  $x^2 - 9x + 20$

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Factor the trinomial where  $a \neq 1$

Stuck? Follow this link: <https://www.youtube.com/watch?v=kIFGLRXes5o>

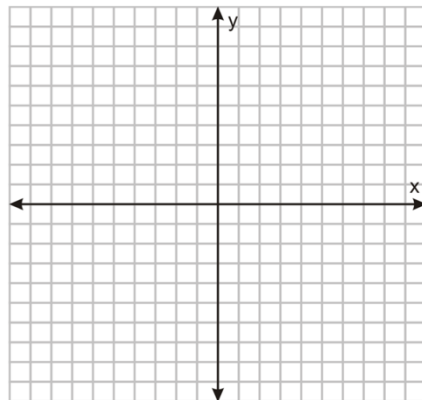
12.  $2x^2 - 3x - 5$

13.  $3x^2 + 11x - 4$

Graph the following line on the coordinate plane.

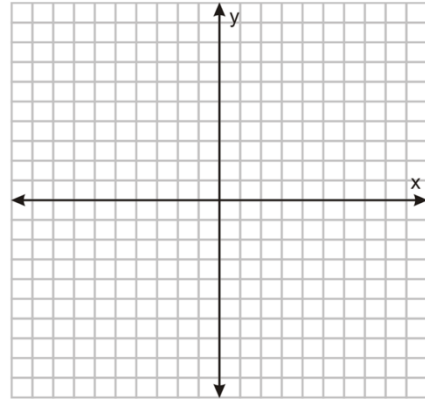
Stuck? Follow this link: <https://www.youtube.com/watch?v=-w6UaC45INI>

14.  $y = 2x - 3$

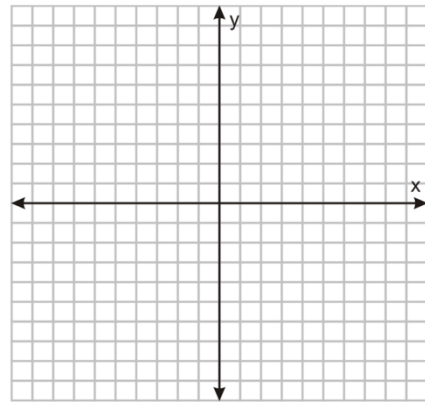


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15.  $3y = -x + 6$



16.  $2x + 4y = 8$

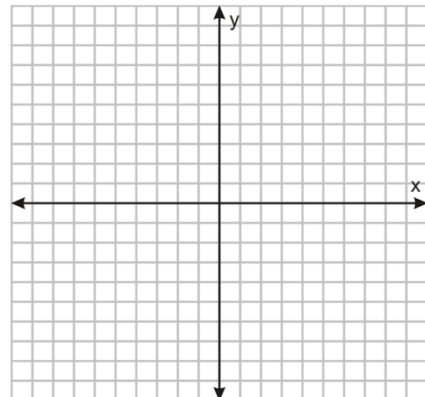


**Graph individual points from a table.**

**Stuck? Follow this link: <https://www.youtube.com/watch?v=Ru5fWYVvoBk>**

17.

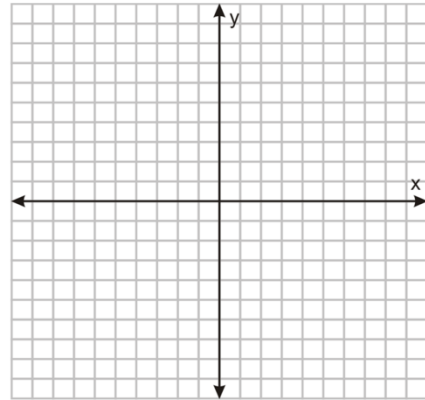
| x  | $f(x)$ |
|----|--------|
| 1  | -4     |
| -3 | -5     |
| 7  | 2      |
| 4  | 0      |
| 2  | 5      |



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18.

| $x$ | $f(x)$ |
|-----|--------|
| -3  | -1     |
| 5   | -7     |
| 0   | 0      |
| 3   | -10    |
| 4   | 4      |



Solve for  $x$  for the following equations.

Stuck? Follow this link: <https://www.youtube.com/watch?v=p9KxtRgfVvs>

19.  $2x + 12 = 3x + 2x - 27$

20.  $\frac{3x-6}{4} = 6$

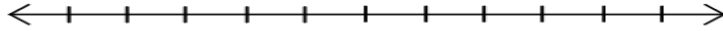
21.  $3(2x - 1) = 5(x - 7)$

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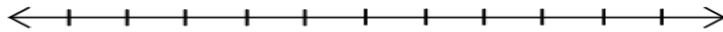
Solve each of the following inequalities. Then graph them on the number line.

Stuck? Follow this link: [https://www.youtube.com/watch?v=S\\_GxAF6xV8Q](https://www.youtube.com/watch?v=S_GxAF6xV8Q)

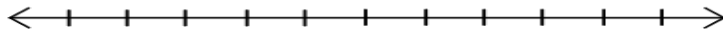
22.  $2x - 4 > 6$



23.  $-5x + 10 \leq 20$



24.  $3(x - 2) \geq 5x - 4$



Simplify the following expressions using exponent rules.

Stuck? Follow this link: <https://www.youtube.com/watch?v=LkhPRz7Hocg>

25.  $2x^3 \cdot 4x^4$

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26.  $3x^2y^2 \cdot 5x^4y^3$

27.  $\frac{25x^7}{5x^3}$

28.  $\frac{30x^5y^4}{6x^2y^3}$

29.  $(6x^4)^2$

**Simplify the following expression using the FOIL Method.**

**Stuck? Follow this link: <https://www.youtube.com/watch?v=EX18-4PjiUA>**

30.  $(x - 5)(x - 8)$

31.  $(2x - 3)(-3x - 5)$



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32.  $(3x - 12)(6x + 14)$

**Evaluate the expressions using substitution**

**Stuck? Follow this link: <https://www.youtube.com/watch?v=nARfQA8Vz6c>**

33.  $x^2 + 3x - 5$ ; use  $x = 3$

34.  $2x^3 - 5x - 2$ ; use  $x = -3$

35.  $x^4 - 3x^2 + 8$ ; use  $x = -2$

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Simplify the following radicals. Leave your answer in simplest radical form.  
Stuck? Follow this link: <https://www.youtube.com/watch?v=YBgi93bqk6g> and  
[https://www.youtube.com/watch?v=2YpE4\\_HIA8](https://www.youtube.com/watch?v=2YpE4_HIA8)

36.  $\sqrt{50}$

37.  $\sqrt{x^5 y^4}$

38.  $\sqrt{32x^8}$

39.  $\sqrt{120x^5 y^3}$

40.  $\sqrt{500x^3 y^{11}}$