Summer Review Packet for Students Entering Algebra II-3

This packet contains skill-based problems that students entering Algebra II-3 should master before the start of the school year. Students who are fluid in these skills will have a strong foundation on which to build their understanding of Algebra II-3 topics. Each concept has been paired with a section from IXL should students want or need additional practice. The high school math website contains links to resources that students may access for reinforcement and additional support should they want or require it. A quiz will be given during the first week of school on the material covered in this packet.

Topics Covered in this Packet

1. Combining Like Terms
2. Solving Multi-Step Equations
3. Graphing Lines and Inequalities from Slope-Intercept Form
4. Graphing Lines from Standard Form
5. Transforming Equations into Slope-Intercept and Standard Forms
6. Writing Equations of Lines Parallel or Perpendicular to Another Line
7. Factoring
8. Simplifying Radicals

Resources

1. **IXL.com** is a web-based program that targets MATH for all grades K-12 with problems based on the common core standards. The math problems have a wide variety of question types, from word problems to interactive graphing. As an added resource, a worked out solution with explanations is provided to aid students in correcting their mistakes. Students should use their pre-existing login information to fully access the site. At the top of each section of this review, the corresponding skills on the website have been identified for students to easily find extra practice problems. Use the Math IXL link on the Wilton High School Math website which is located on the High School website under Our School>Departments>Math. Skill EE.1 may be found by entering it into the search bar.
2. **Khanacademy.org** offers practice exercises, instructional videos, and a personalized learning dashboard that empower learners to study at their own pace in and outside of the classroom. The math mission is to guide learners from kindergarten to calculus using state-of-the-art, adaptive technology that identifies strengths and learning gaps. Khan Academy has also partnered with institutions like NASA, The Museum of Modern Art, The California Academy of Sciences, and MIT to offer specialized content. Students can find related content on the site by typing in key words used to identify the sections of this packet (i.e. search: Factoring)
3. **Braingenie.ck12.org** is an online learning program for math and science students. The program allows students to learn and practice skills based on the common core standards. There is an optional online multi-player challenge component to the site that many students enjoy. Students can navigate to material related to the sections of this packet by using a key word search or by selecting the sections they need work on under the Algebra I section of the site.
4. **Math-Aids.Com** provides worksheets that are randomly and dynamically generated by their math worksheet generators. This allows users to make an unlimited number of printable math worksheets to their specifications instantly. Keys are generated for each worksheet so learners can verify their progress.

Combining Like Terms (IXL: Level K Skills I.2 & Z.6)

1. $6a-4a+2a+7a$	2. $3m-4n+7m-9-6n+2$
3. $2x+3y-14-5x+5y^2$	4. $-5(7a-4b+6)$
5. $2x^2(5x^3-3x+4y)$	6. $3a(2a-6b+7)-5ab$
7. $4y(2y-6)+5(y^2-3y)$	8. $8-2(3a+4b-1)-6(4b-2a)$

Solving Multi-Step Equations (IXL: Level K J.4 - J.6 & J.9)

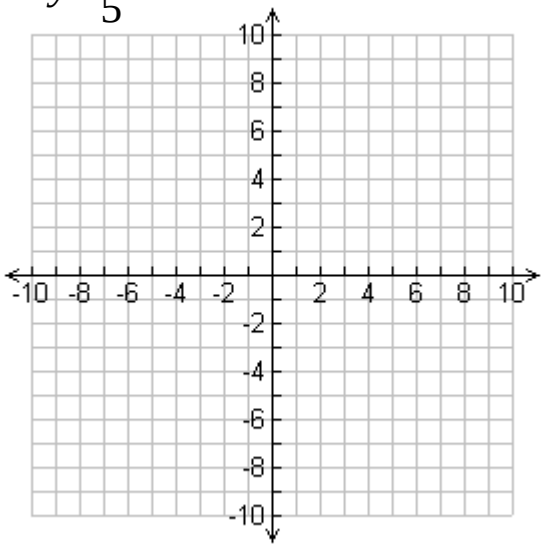
9. $3x-2=-5$	10. $\frac{x-7}{5}=-3$

11. $\frac{m}{-5}+6=31$	12. $-7(x-3)=-4$
13. $6=3+5(y-2)$	14. $6(y+2)-4=-10$
15. $-8(4+9x)=7(-2-11x)$	16. $-3(2n-5)=\frac{1}{2}(-12n+30)$

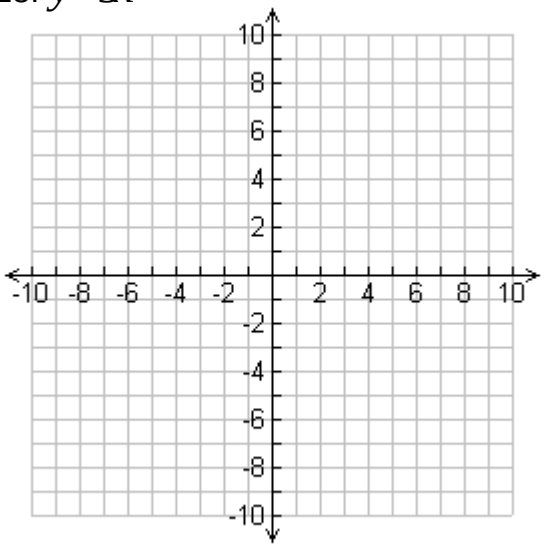
Graphing Lines and Inequalities from Slope-Intercept Form

(IXL: Level K Skills S.1 - S.8 & T.1-T.3)

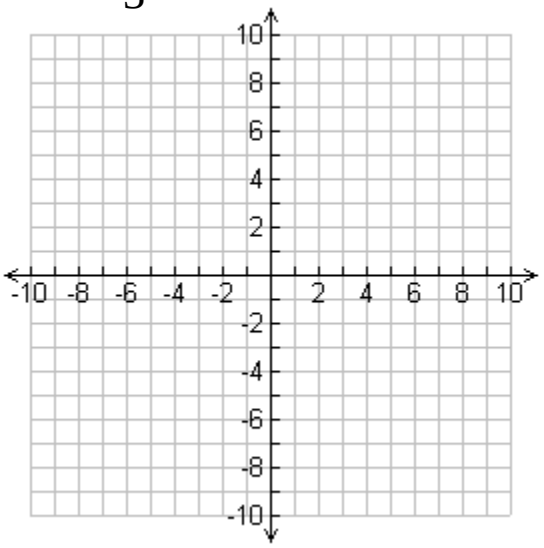
17. $y=\frac{2}{5}x-4$



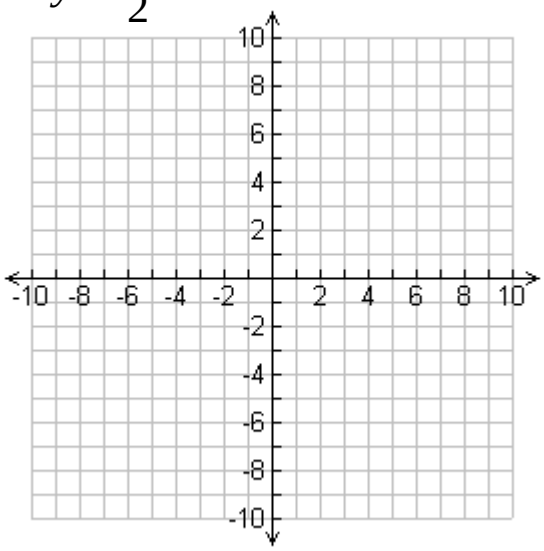
18. $y=5x$



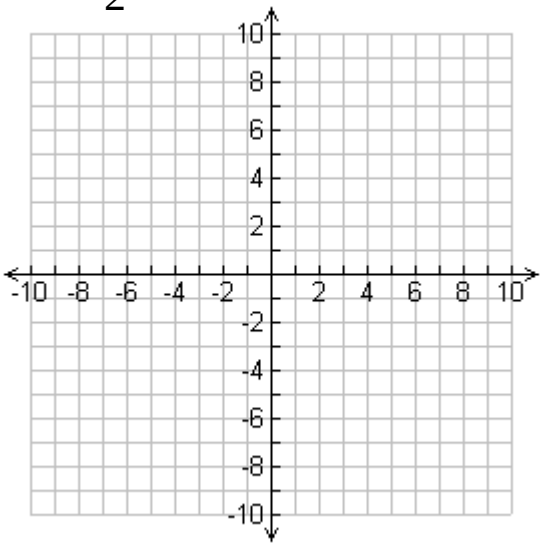
19. $y=-\frac{2}{3}x+6$



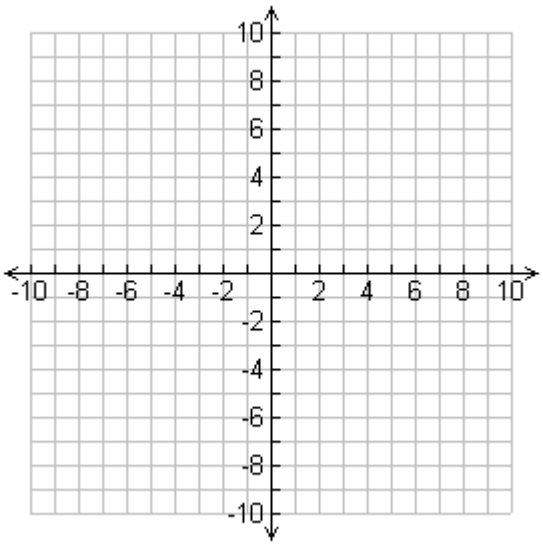
20. $y=-\frac{x}{2}+7$



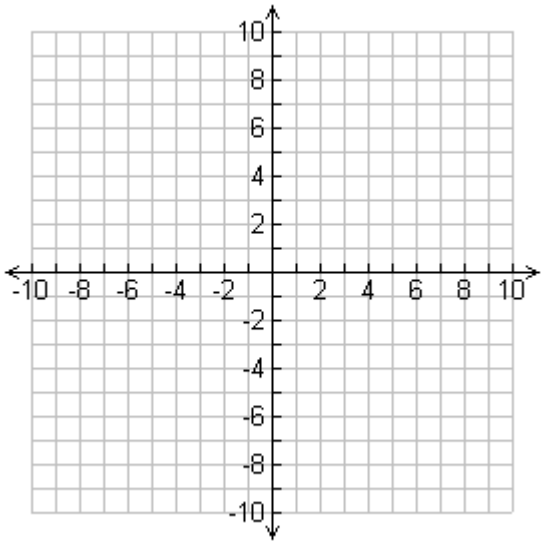
21. $y>\frac{5}{2}x-3$



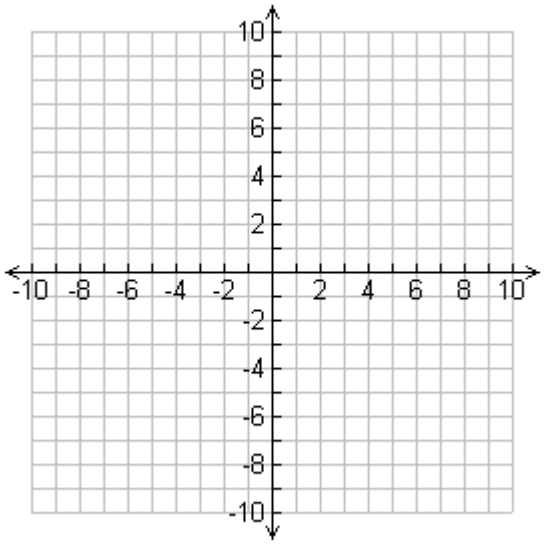
22. $y\leq -4x+2$



23. $y \geq \frac{x}{4} - 5$

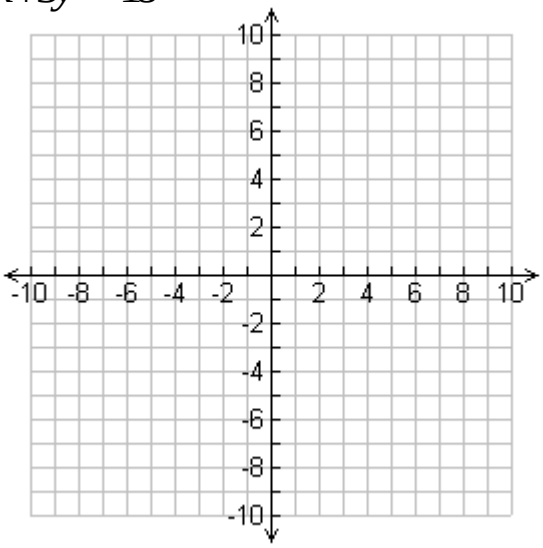


24. $y < x$

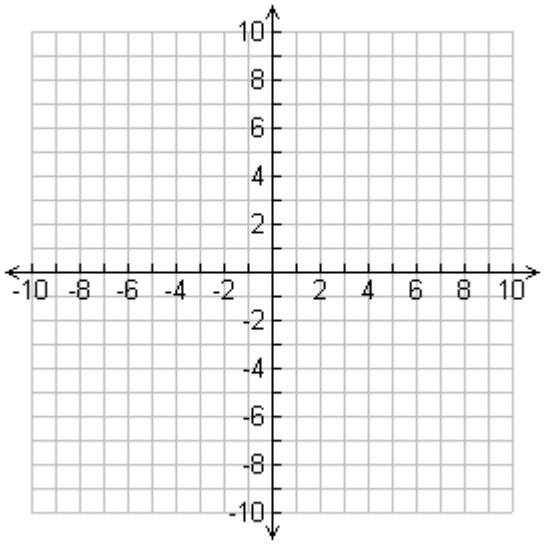


Graphing Lines from Standard Form (IXL: Level K Skills S.12 - S.15)

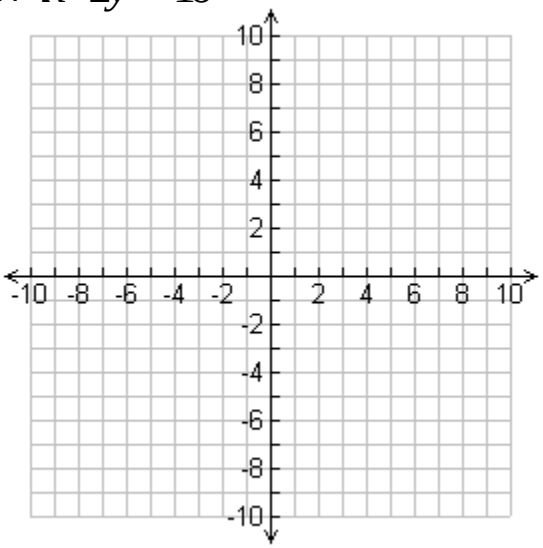
25. $2x + 3y = -18$



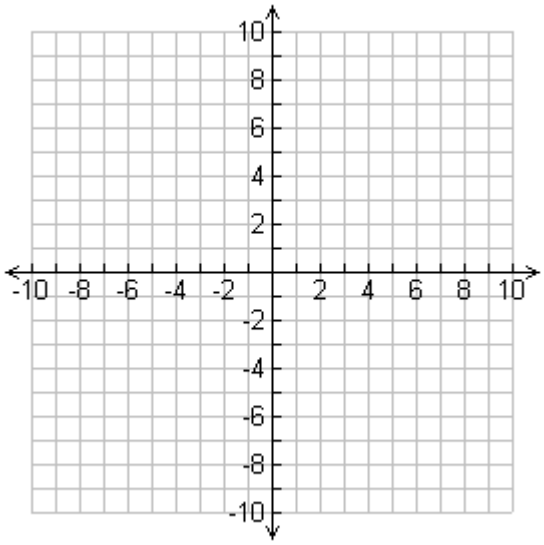
26. $-3x + 2y = 12$



27. $4x - 2y = -16$

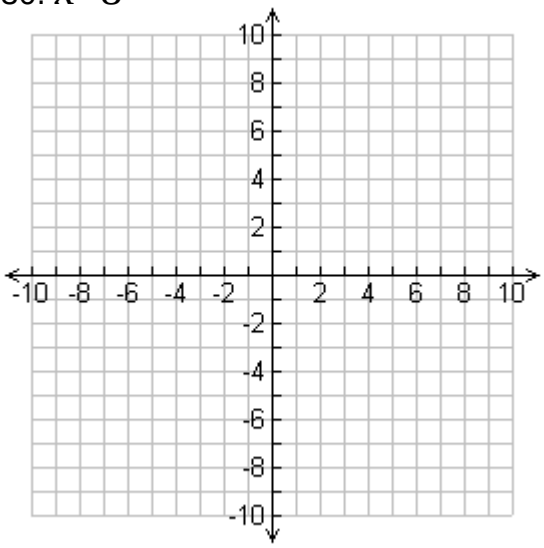


28. $2x - 3y = -9$



29. $y=-5$

30. $x=8$



Transforming Equations into Slope-Intercept Form (IXL: Level K Skill S.9)

31. $4x+3y=9$	32. $6x-5y=30$
33. $11x-3y=-25$	34. $y-5=2(x-4)$

35. $y-2=\frac{3}{4}(x-16)$	36. $y+1=-\frac{1}{2}(3x-5)$

Transforming Equations into Standard Form (IXL: Level K Skills S.11)

37. $y=\frac{3}{4}x-1$	38. $y=-\frac{2}{3}x+5$
39. $y=\frac{5}{4}x-7$	40. $y-3=\frac{1}{2}(x-8)$

41. $y+5=-\frac{2}{3}\left(x+12\right)$	42. $y-8=\frac{3}{5}\left(x+2\right)$

Writing Equations of Lines Parallel to Another Line (IXL: Level K Skills S.19 & S.20)
Write an equation in slope-intercept form of the line that passes through the given point and is parallel to the graph of the given equation.

43. $\left(9,-3\right);\ y=\frac{2}{3}x+4$

44. $\left(-4,2\right);\ y=\frac{3}{4}x-7$

45. $(-1,6)$; $2x-5y=8$

46. $(-4,-8)$; $6x-2y=-5$

Writing Equations of Lines Perpendicular to Another Line (IXL: Level K Skills S.19 & S.20)
Write an equation in slope-intercept form of the line that passes through the given point and is perpendicular to the graph of the given equation.

47. $(3,7)$; $y=-\frac{4}{3}x+11$

48. $(-3,1)$; $y=\frac{2}{3}x-6$

49. $(4,-3)$; $2x-7y=12$

50. $(4,-6)$; $3x-2y=8$

Factoring (IXL: Level K Skills AA.2 – AA.5)

51. $3x+6$	52. r^2-10r
53. $4g^2-10g$	54. $8g^2-10p$
55. $17a^3+51a^2-34a$	56. $\frac{3}{4}-\frac{1}{4}n$

57. $14r^2y - 91ry - 105y$	58. $y^3z - y^5z^9$
59. $x^2 + 5x + 6$	60. $g^2 - 6g - 16$
61. $x^2 + 10x - 24$	62. $k^2 + 6k + 9$
63. $4a^2 - 7a - 2$	64. $12p^2 - 11p - 36$
65. $4v^2 - 42v + 54$	66. $9x^2 - 30x + 25$
67. $c^2 - 25$	68. $9y^2 + 16$
69. $p^4 - 16$	70. $25v^2z^6 - 9c^8$

Simplifying Radical Expressions (IXL: Level K Skills EE.1)

71. $\sqrt{25}$	72. $\sqrt{50}$
73. $\sqrt{128}$	74. $\sqrt{150}$
75. $\sqrt{363}$	76. $\sqrt{512}$
77. $\sqrt{847}$	78. $\sqrt{\frac{9}{36}}$
79. $\sqrt{\frac{27}{49}}$	80. $\sqrt{\frac{12}{27}}$