

Name:

Kennedy High School
Summer 2021 Math Packet
For Rising Algebra 2 / IB SL Year 1 Students

The problems in this packet are designed to help rising Algebra 2 students (**Honors or Regular**) review topics from previous mathematics courses. When you do the problems, show all work that leads you to the solution. Please use these resources to help aid you in your recollection of these topics:

<http://www.ck12.org/algebra> and www.khanacademy.org

1. Simplify:

a. $4 \cdot 3^2$

b. $[2^3 + 4(5 - 3) \div 8]$

2. Evaluate:

a. $4x^3 + 2x^2$ if $x = -2$

b. $\frac{2x^3+4}{5x}$ if $x = 2$

3. Solve each equation.

a. $2x + 14 = 5x - 15$

b. $3x + 1 = -x - 7$

c. $\frac{x+3}{4} = \frac{x}{2}$

d. $5 - (4 - 2x) = 2(x + 4)$

8. Solve each quadratic equation using quadratic formula.

$$\text{Hint: } x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

a. $x^2 - 5x + 4 = 0$

b. $2x^2 - x + 1 = 0$

c. $2x^2 + 3x = 2$

9. Factor completely. You can check your answer by multiplying.

a. $2x^2 - 4x$

b. $x^2 + 5x - 14$

c. $x^2 - 16$

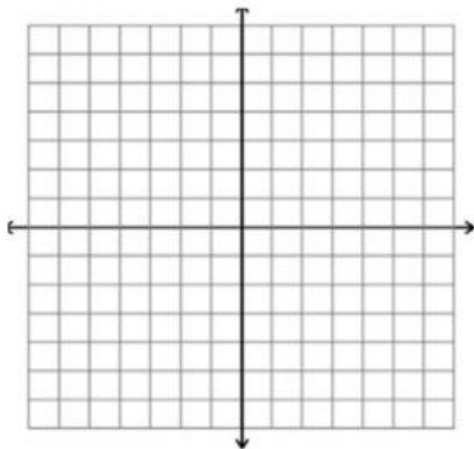
d. $x^2 + 16x + 64$

e. $3x^2 - 27$

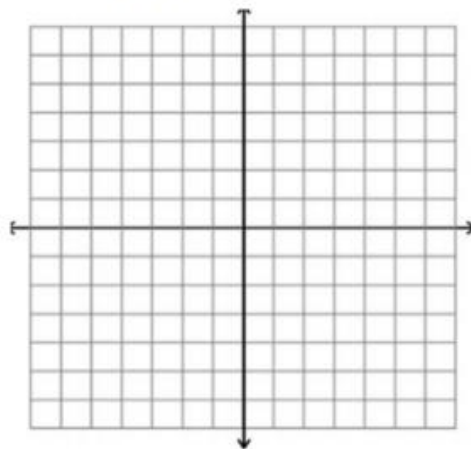
f. $3x^2 + 8x + 4$

10. Graph each function.

a. $f(x) = 2x - 1$

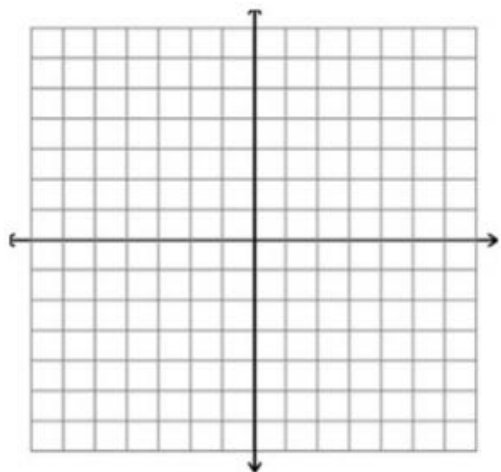


b. $g(x) = 2^x$

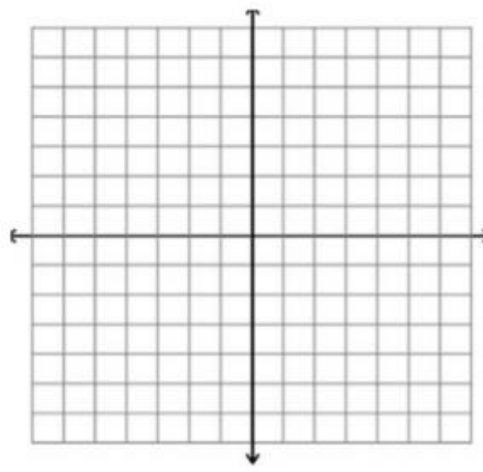


x	g(x)

c. $f(x) = (x - 2)^2 + 3$



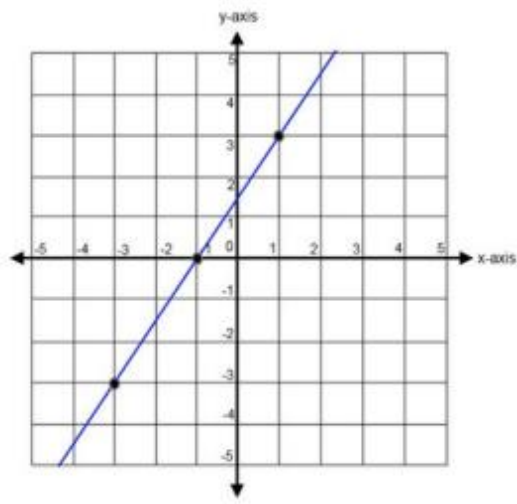
d. $g(x) = \sqrt{x}$



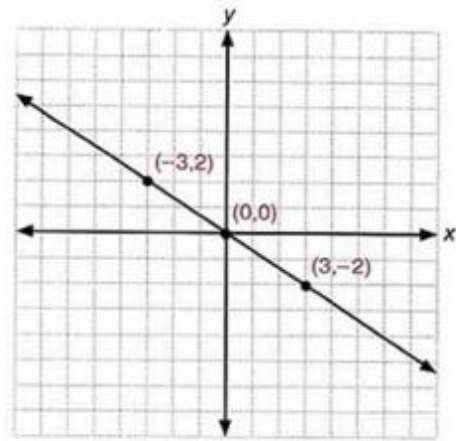
x	g(x)

11. Find the slope of each line.

a.



b.



12. Find the slope of the line given two points.

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

a. (1, 6) and (2, 3)

b. (1, -2) and (-2, 3)

c. (1, 3) and (2, 3)

d. (2, -1) and (2, -3)

13. Convert each degree measure into radians and each radian measure into degrees.

1) 325°

2) 60°

3) $-\frac{4\pi}{3}$

4) $\frac{23\pi}{12}$

5) 570°

6) -315°

14. Simplify. Use absolute value signs when necessary.

1) $\sqrt{24}$

2) $\sqrt[3]{1000}$

3) $\sqrt[3]{-162}$

4) $\sqrt{512}$

5) $\sqrt[4]{128n^8}$

6) $\sqrt{98k}$

7) $\sqrt[5]{224r^7}$

8) $\sqrt[3]{24m^3}$

9) $\sqrt{392x^2}$

10) $\sqrt{512x^2}$

11) $\sqrt[4]{405x^3y^2}$

12) $\sqrt[3]{-16a^3b^8}$

13) $\sqrt[4]{128x^7y^7}$

14) $\sqrt[3]{16xy}$