Algebra 2 Trig G
Quarter 1 Cumulative REVIEW

Name Key

Multiple Choice. Circle the correct answer.

1) Evaluate the expression: $4-8\bullet 2+2^2$

$4-16+4$ **-8**

2) Evaluate the expression: $4+8\div 2-2^3$

$4+4-8$ **0**

3) Evaluate the expression: $[8-(2\bullet 3^2)]\div 2$

$(8-18)\div 2$ **-5**

In #4-5, write an algebraic expression for each verbal expression.

4) The sum of eight times a number and nine.

$8x+9$

5) Twenty less than the quotient of a number and ten.

$\frac{x}{10}-20$

6) Solve and graph: $|x-4|\le 3$

$x-4\le 3$ **$x\le 7$**

$x-4\ge -3$ **$x\ge 1$**

7) Evaluate $c(3b-2a^2)$ *if* $a=-4$, $b=5$, *and* $c=3$.

$3(3(5)-2(-4)^2)$

$3(15-32)$

$3(-17)$

-51

8) Evaluate $\frac{2b-3ac}{8c-2ab}$ *if* $a=4,\ b=-2,$ *and* $c=3.$

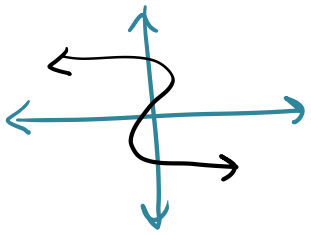
$\frac{2(-2)-3(4)(3)}{8(3)-2(4)(-2)} = \frac{-4-36}{24+16} = \frac{-40}{40} = -1$

9) Simplify $5(2x+3) - 2(x-4)$

$10x+15-2x+8$

$8x+23$

10) Draw the graph of an example of a relation that is NOT a function.



11) Compute the function value: $f(-3)$ if $f(x)=\frac{x+1}{4x-3}$.

$\frac{-3+1}{4(-3)-3} = \frac{-2}{-15} = \frac{2}{15}$

12) Which is the standard form of $\left(y=\frac{3}{4}x-\frac{2}{5}\right)$?

$\cdot 4 \quad 4y = 3x - \frac{8}{5}$

$-3x+4y = \frac{8}{5}$

$3x-4y=\frac{-8}{5}$

13) What is the slope of the line that passes through $(5,-2)$ and $(-1,7)$.

$m=\frac{-2-7}{5-1} = \frac{-9}{6} = \frac{-3}{2}$

14) Write the equation of the line that passes through $(3,-3)$ and $(-5,1)$?

$m=\frac{-3-1}{3-5} = \frac{-4}{8} = \frac{-1}{2}$

$y=mx+b$

$-3=\frac{-1}{2}(3)+b$

$-3=-1.5+b$

$b=-1.5$

$y=\frac{-1}{2}x-1.5$

15) Write the equation for a line that goes through $(-3,2)$ and is perpendicular to $y=\frac{3}{2}x+2$

$m=\frac{-2}{3}$

$y=mx+b$

$2=\frac{-2}{3}(-3)+b$

$2=2+b$

$b=0$

$y=\frac{-2}{3}x$

16) Enter the data into your calculator and determine the prediction equation (line of best fit).

Number of houses visited on Halloween	Pieces of candy received
12	60
14	72
23	112
? x	100
19	97
40	y ?

Prediction Equation:

$y = 4.7297x + 4.8446$

17) Using your prediction equation from #16, solve for the missing pieces of data.

$y = 4.7297(40) + 4.8446$

$y =$ 194 pieces of candy

$100 = 4.7297x + 4.8446$

$95.1554 = 4.7297x$

$20 = x$ houses

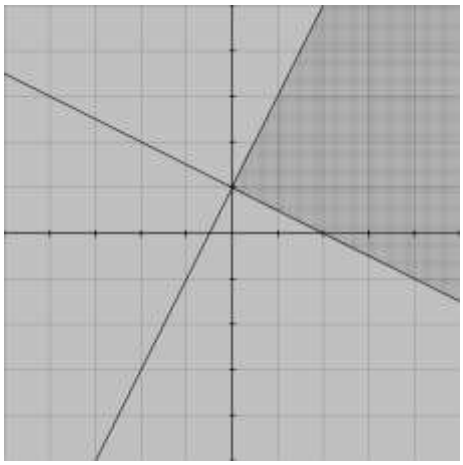
18) Which graph is the solution to the system of inequalities:

$y \leq 2x + 1$

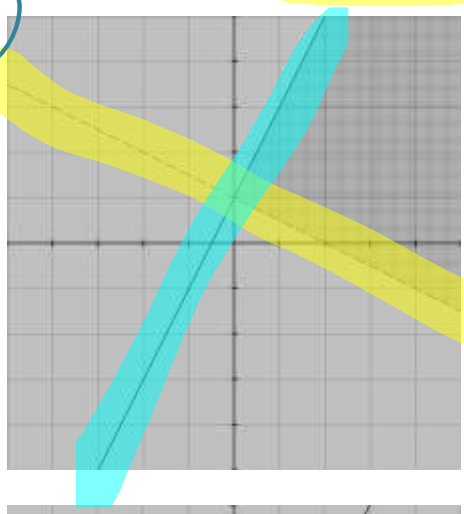
$2y > -x + 2$

$y > -\frac{1}{2}x + 1$

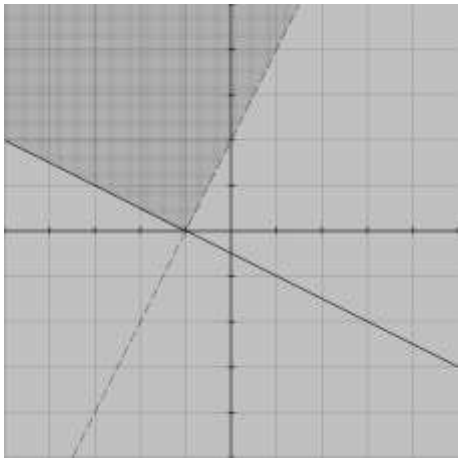
A)



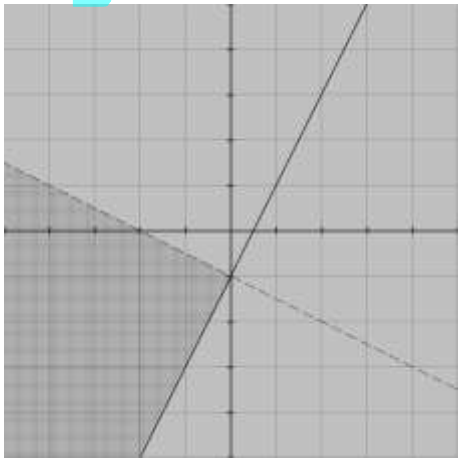
B)



C)



D)



19) Find the vertex of the parabola whose equation is: $y = x^2 + 6x - 15$

$x = \frac{-b}{2a}$ $x = \frac{-6}{2(1)} = -3$ $y = (-3)^2 + 6(-3) - 15$ $y = -24$ $(-3, -24)$

20) Solve the equation using the quadratic formula: $2x^2 - x - 6 = 0$

21) Simplify: $i^{45} = i^1 = i$

22) Simplify: $(3 - 5i)(3 - 4i)$

$9 - 12i - 15i + 20i^2$

$9 - 27i + 20(-1)$

$9 - 27i - 20$

$-11 - 27i$

23) Solve the equation using the quadratic formula: $2x^2 - 5x + 6 = 0$

24) Simplify $\sqrt{-4x^2y^2z^4}$

$i\sqrt{2^2 \cdot x^2 \cdot y^2 \cdot z^2 \cdot z^2}$

$2ixyz^2$