

NAME: _____

Math course you are scheduled to take in September: _____

Mathematics Summer Packet

For incoming seniors taking the following courses in September:

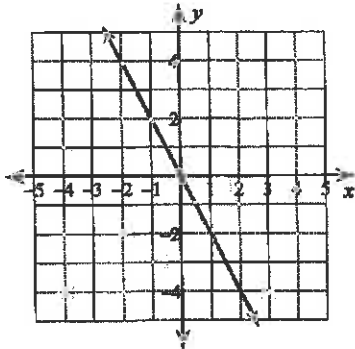
Statistics and Trigonometry

- Completed packets will be collected on the first Monday of Academic week in September.
- Calculators may be used, but you must show your work to get full credit.
- This packet will count as a quiz grade for the first term of the upcoming school year.

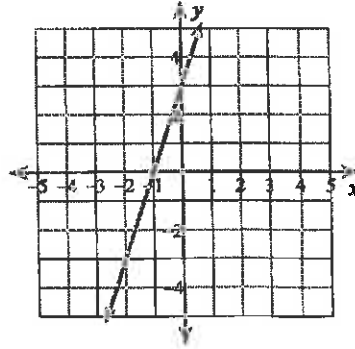
Due 1st Academic Monday in September. Show work. Date _____ Period _____

Write the slope-intercept form of the equation of each line.

1)



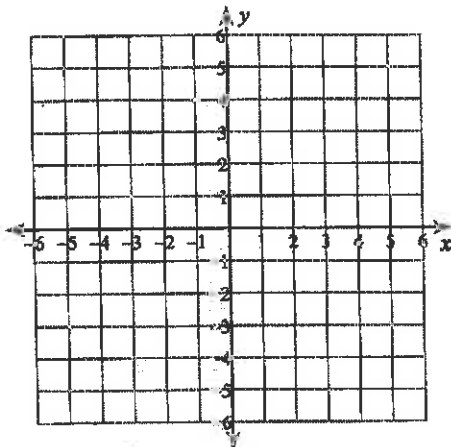
2)



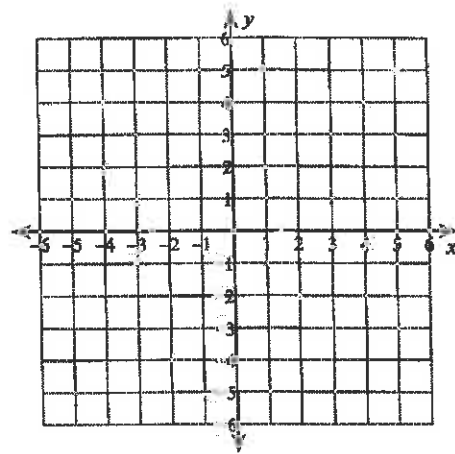
Equations and Inequalities

Sketch the graph of each linear inequality.

3) $y < -3x + 3$



4) $2x - y \geq 1$



Solve each equation.

5) $-98 = 7v - 42$

6) $-192 = 8 + 40a$

7) $176 = 4(4 - 5n)$

8) $13 - 4x = 1 - 2x$

9) $8\left(\frac{3}{2}b + \frac{3}{2}\right) = 84$

10) $4(3m - 5) = 6(m - 8) - m$

Solve each system of equations algebraically.

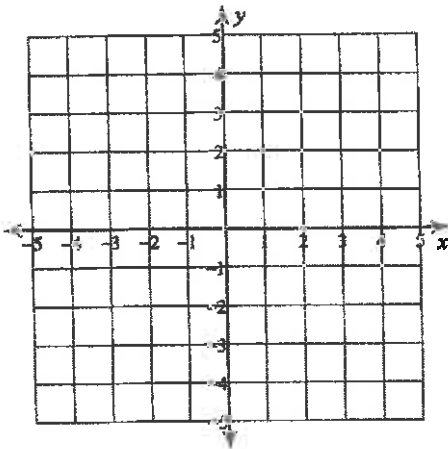
11) $9x + 9y = 27$
 $-x - 2y = 3$

12) $-8x + y = -5$
 $-2x + 4y = 10$

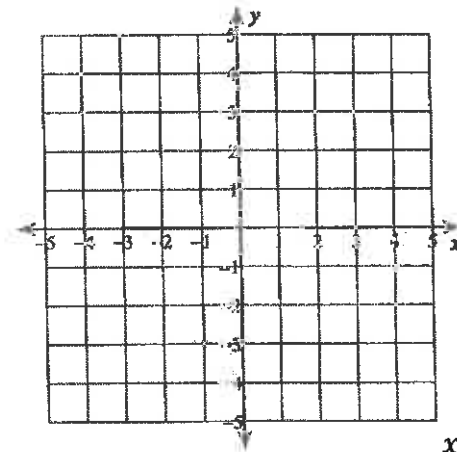
Solving Systems of Equations
Solve each system by graphing.

13) $y = \frac{3}{4}x - 4$

$y = -\frac{3}{4}x + 2$



14) $x + 2y = -8$
 $5x - 2y = -4$



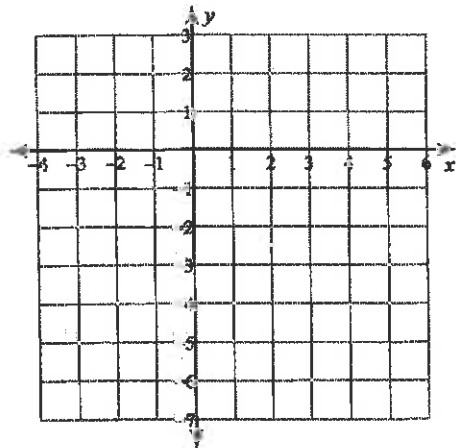
$$\begin{array}{r} xy + 4x + 4y + 4 \\ \hline 6 \\ \hline 36 \end{array}$$

BONUS Simplify each expression. (The answer will be a single rational expression.)

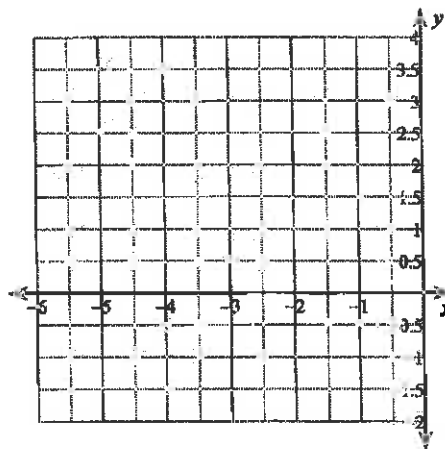
9) BONUS 2

Sketch the graph of each function. Identify the zeros and vertex coordinates.

15) $y = -2x^2 - 8x - 6$



16) $y = x^2 + 4x + 3$



Function Operations

Evaluate each function.

17) $w(x) = x^3 + 2x$; Find $w(3)$

18) $k(n) = 2n^3 + 5$; Find $k(-4)$

Perform the indicated operation.

19) $g(x) = 3x + 2$
 $h(x) = x^2 - 2x$
 Find $(g - h)(x)$

20) $f(n) = 2n + 3$
 $g(n) = n^2 - 2n$
 Find $(f \cdot g)(n)$

21) $g(x) = x - 2$
 $f(x) = 3x - 5$
 Find $(g \circ f)(x)$

22) $f(a) = 4a - 2$
 $g(a) = a^3 + 4a$
 Find $\left(\frac{f}{g}\right)(4)$

Simplify. Leave your answer in simplified radical form.

23) $\sqrt{216}$

24) $-4\sqrt{75}$

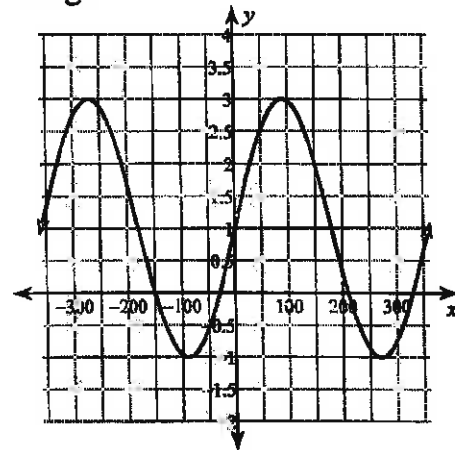
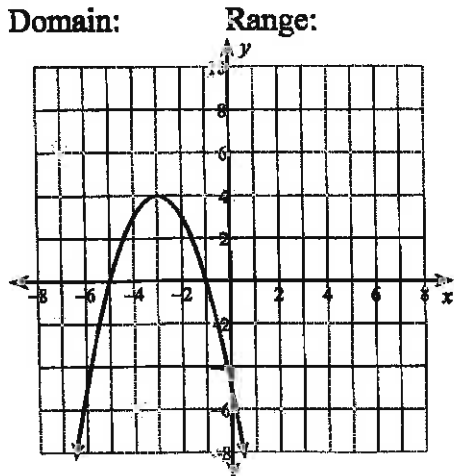
25) For help with problems #22 to 23, go to the link below or search google for "domain and range of a graph."
www.youtube.com/watch?v=ObEucyZX464

26) Find the domain and range of the graph below using interval or set notation.

Find the domain and range of the graph below using interval notation or set notation.

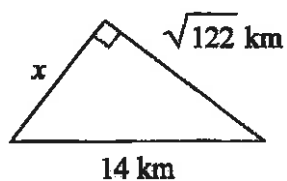
Domain:

Range:

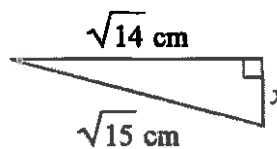


Pythagorean Theorem: Find the missing side of each triangle. Leave your answers in simplest radical form.

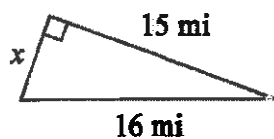
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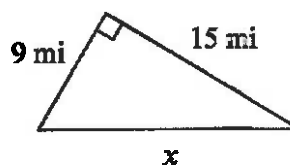
28)



29)

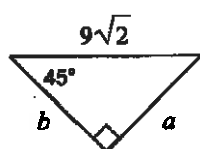


30)

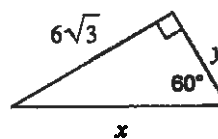


Special Right Triangles: Find the missing side lengths. Leave answers exact and in simplest form.

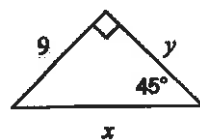
31)



32)



33)



34)

