Precalculus Name_____

Summer Assignment

Date_____

Solve each equation.

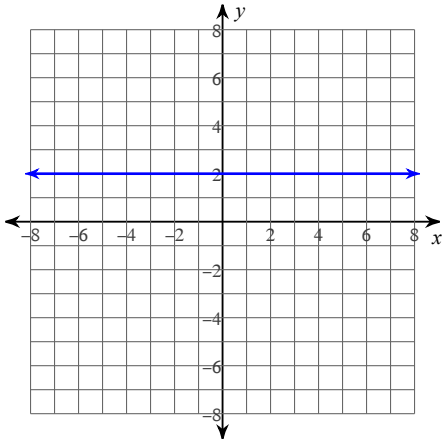
1) $4(8 - 4k) = 96$

2) $114 = -6(6b + 1) - 4b$

3) Anjali made a trip to her cabin on the lake and back. The trip there took two hours and the trip back took five hours. What was Anjali's average speed on the trip there if she averaged 30 km/h on the return trip?

Each graph represents a relation. Determine if the relation is a function.

4)

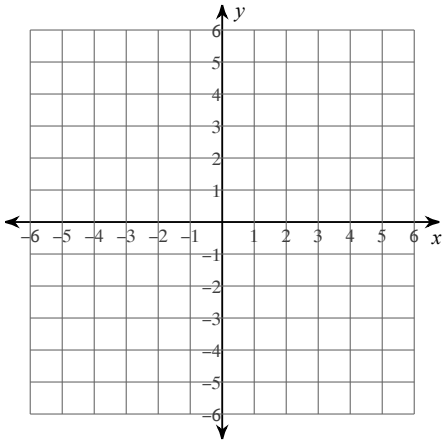


Evaluate each function for the given value.

5) $f(x) = -2|x + 2| + 7$; Find $f(4)$

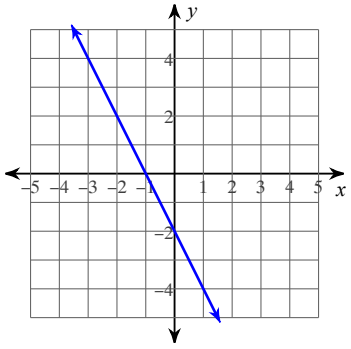
Sketch the graph of each line.

6) $3x + 5y = 0$



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

7)



Find the constant of variation.

8) $y = \dfrac{10}{x}$

Solve each system by graphing.

9) $y = -\dfrac{8}{3}x + 4$

$y = -\dfrac{1}{3}x - 3$

Solve each system by elimination.

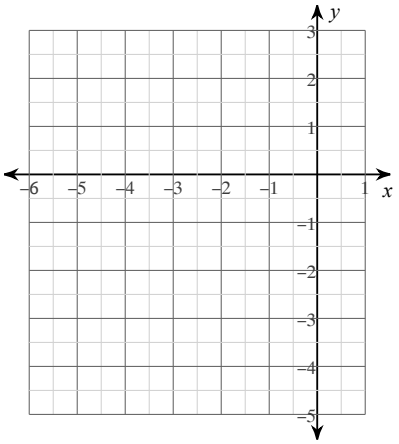
10) $x + 6y = -19$
$6x - 7y = -28$

Solve each system by substitution.

11) $-x - 4y = 24$
$x + 3y = -16$

Sketch the graph of each function.

12) $y = x^2 + 8x + 13$



Factor each completely.

13) $n^3 - 13n^2 + 30n$

14) $9k^2 - 4$

15) $25n^2 + 30n + 9$

Solve each equation by taking square roots.

16) $25x^2 - 1 = 0$

Solve each equation by factoring.

17) $x^2 + 18 = 9x$

Solve each equation by completing the square.

18) $v^2 - 6v + 8 = 9$

19) $n^2 - 10n - 87 = 9$

Solve each equation with the quadratic formula.

20) $4b^2 - 5 = b$

Simplify each expression.

21) $(1 + 3n - 4n^2) + (2n - 6 + n^3)$

Find each product.

22) $(x - 7)(4x - 2)$

Factor each completely.

23) $15n^3 + 20n^2 + 24n + 32$

Evaluate each function.

24) $h(a) = 3a - 2$; Find $h(-2)$

Perform the indicated operation.

25) $f(n) = 4n + 1$
$g(n) = 3n - 5$
Find $\left(\frac{f}{g}\right)(n)$

Simplify.

26) $\sqrt{18x^2}$

27) $-3\sqrt{45} - \sqrt{5} - \sqrt{5}$

28) $\dfrac{3\sqrt{4}}{\sqrt{25}}$

29) $(-5i) + (8 + 6i) + (2i)$

30) $\dfrac{-2 + 4i}{2 + 9i}$

Evaluate each expression.

31) $\log_6 36$

Expand each logarithm.

32) $\log_5 (a^6 \cdot b)^6$

Solve each equation.

33) $\log_{19} (-5m - 10) = \log_{19} -4m$

34) $\log_{19} 16 = \log_{19} (2n - 10)$