GREATER ATLANTA CHRISTIAN SCHOOL

DC Precalculus
Summer Math Packet

Completion of the summer math packet is a GAC requirement and will serve as preparation for the fall semester. You must show all the work and steps for solving the problems.

This Packet is designed to be completed over time and in small chunks.

Due Date: August 5, 2024

Name: _____

Due by first day of school - Show your work!

Evaluate each function.

1) $k(x) = 2x - 1$; Find $k(-10)$

2) $h(a) = 4a - 2$; Find $h(7)$

3) $h(t) = 2t - 2$; Find $h(6)$

4) $k(x) = 3x + 1$; Find $k(10)$

5) $k(x) = 3x + 1$; Find $k(-2)$

6) $f(n) = n^3 - 4n$; Find $f(-6)$

7) $h(n) = -n^3 - 4$; Find $h(-5)$

8) $h(n) = 2n^3 - 3$; Find $h(-1)$

Evaluate each function for the given value.

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

10) $f(x) = 3|x + 4| - 6$; Find $f(-1)$

Perform the indicated operation.

11) $f(x) = 4x + 2$
$g(x) = -x^3 - 4$
Find $(f \cdot g)(x)$

12) $h(x) = 2x + 1$
$g(x) = x^3 + 3$
Find $(h \cdot g)(x)$

13) $f(n) = -n + 3$
$g(n) = n^3 + 2n$
Find $(f - g)(n)$

14) $f(t) = t + 1$
$g(t) = 4t + 2$
Find $(f + g)(t)$

15) $g(n) = 3n + 5$
$f(n) = 3n + 2$
Find $(g - f)(n)$

16) $f(t) = 2t + 3$
$g(t) = t^3 - 3t^2$
Find $(f - g)(3)$

17) $g(x) = x^2 + 3$
$h(x) = x - 5$
Find $(g \circ h)(10)$

18) $g(t) = 4t - 3$
$f(t) = 2t + 4$
Find $(g \circ f)(-6)$

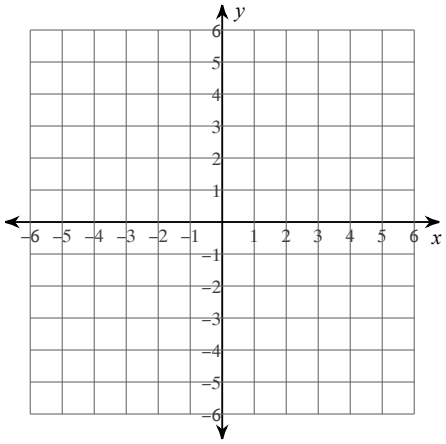
Solve each equation by factoring.

19) $3k^2 = 12$

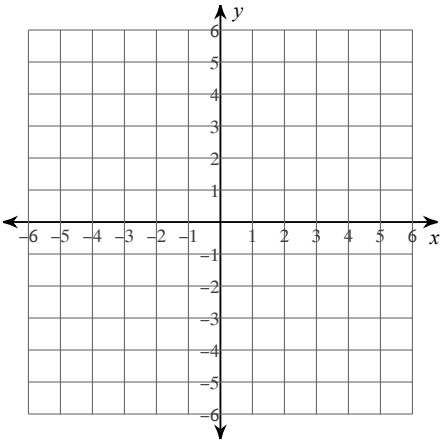
20) $x^2 = 6x - 9$

Sketch the graph of each line.

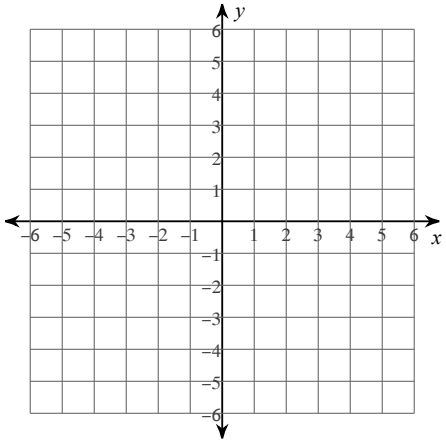
21) x-intercept = 1, y-intercept = –1



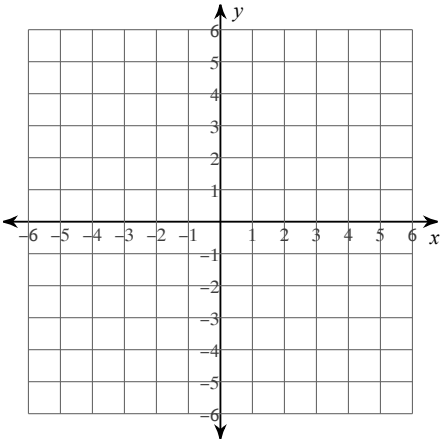
22) x-intercept = –2, y-intercept = 1



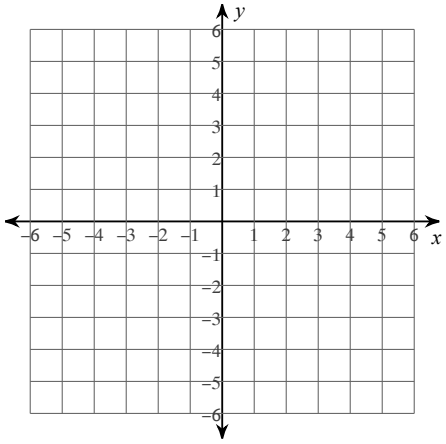
23) $y = \frac{4}{3}x - 4$



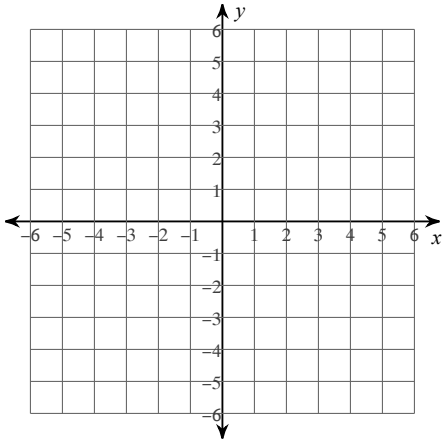
24) $y = -3x + 5$



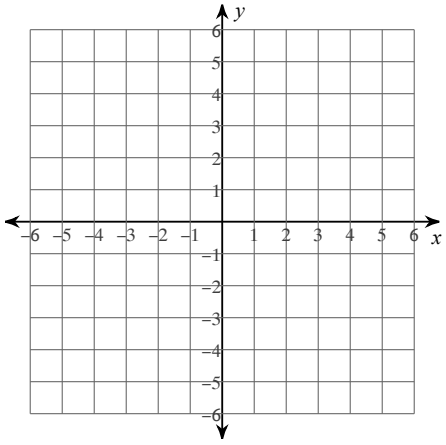
25) $y = -\frac{8}{5}x + 5$



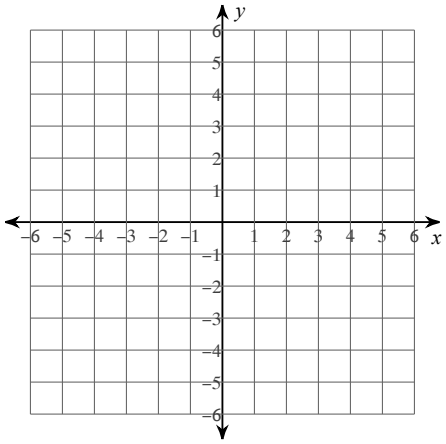
26) $y = -\frac{7}{3}x - 3$



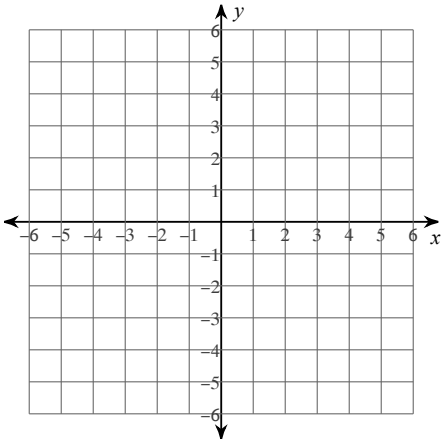
27) $y = \frac{3}{2}x + 1$



28) $0 = 10 + 5x + 2y$

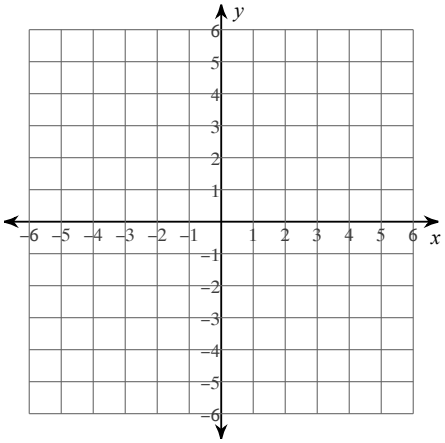


29) $15 - 5y = -7x$

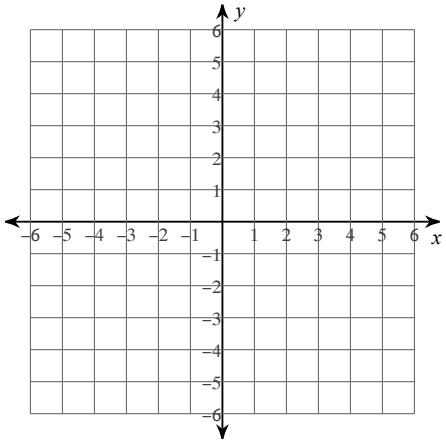


Graph each equation.

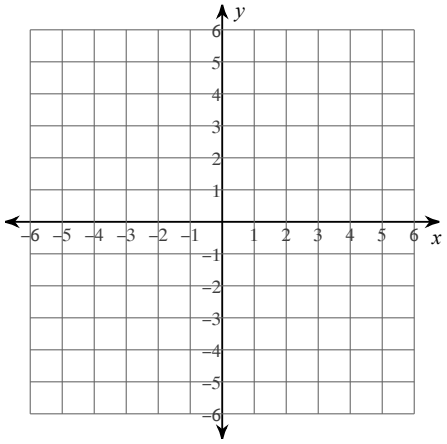
30) $y = |x - 3| + 4$



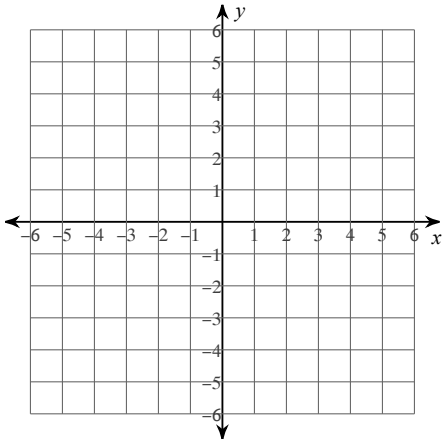
31) $y = |x - 2| - 2$



32) $y = |3x - 2|$

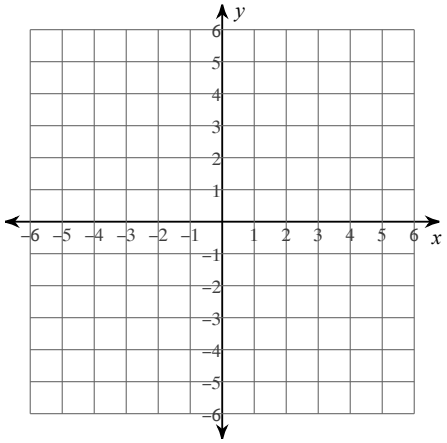


33) $y = |3x| + 1$

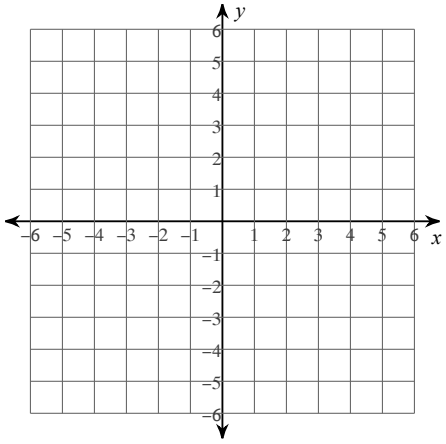


Sketch the graph of each linear inequality.

34) $y > 7x + 4$



35) $y > \frac{4}{3}x - 1$



Solve each equation by factoring.

36) $(x + 1)(4x - 5) = 0$

37) $(r + 1)(4r - 3) = 0$

38) $(x+5)(x+3)=0$

39) $(p+4)(4p+3)=0$

40) $(5p+2)(p+5)=0$

41) $5x^2+120=-50x$

42) $2m^2-6m=36$

43) $8n^2=-64+48n$

44) $m^2-4m=5$

45) $n^2=8n$

46) $17x^2+14x-53=-4x^2+3$

47) $15n^2+31n=-14$

48) $6x^2-16=x^2-38x$

49) $2b^2+5b-20=1+7b-b^2$

50) $-7-11n=-8-8n-2n^2$

Solve each equation by taking square roots.

51) $-6x^2=-348$

52) $-6n^2=-384$

Solve each equation with the quadratic formula.

53) $4v^2-10v=-4$

54) $9p^2-3p=-9$

55) $5x^2=-3-6x$

56) $10k^2+2k=-10$

57) $3x^2-27=0$

Solve each equation by completing the square.

58) $m^2-18m+23=6$

59) $x^2-16x-77=-6$

60) $m^2 - 16m - 11 = 6$

Solve each system by graphing.

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

62) $y = -\frac{1}{2}x + 3$
$y = \frac{1}{2}x - 1$

63) $y = -x + 4$
$y = 5x - 2$

64) $y = 5x - 2$
$y = x + 2$

65) $y = x - 4$
$y = -x - 2$

Solve each system by elimination.

66) $-4x - 4y = 4$
$-8x - 8y = 24$

67) $3x + 2y = -4$
$-x - 6y = -20$

68) $-6x - 3y = -6$
$12x - 5y = 12$

69) $x - 7y = -2$
$2x - 14y = -12$

70) $-6x + y = -2$
$-x - 2y = 4$

Solve each system by substitution.

71) $-2x + 4y = -16$
$-8x + y = 11$

72) $x + y = -2$
$-2x - y = 5$

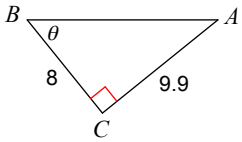
73) $2x + 6y = 4$
$x + 3y = 4$

74) $-4x + 5y = -21$
$x + 4y = -21$

75) $-2x - 12y = -14$
$x + 6y = 7$

Find the measure of each angle indicated. Round to the nearest tenth.

76)



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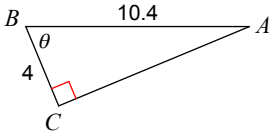

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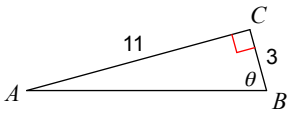

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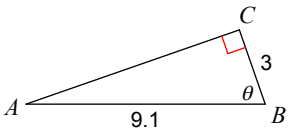

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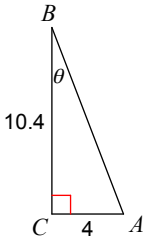
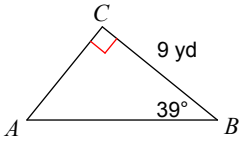


Solve each triangle. Round answers to the nearest tenth.

81)



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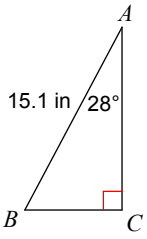

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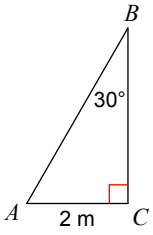

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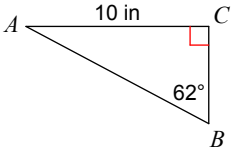

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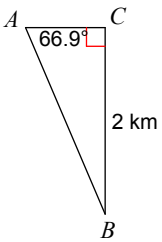
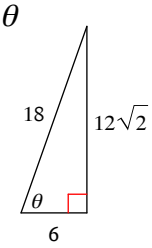
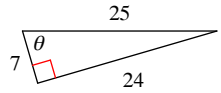


Find the value of the trig function indicated.

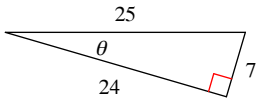
86) sin θ



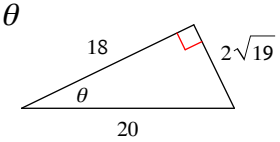
87) tan θ



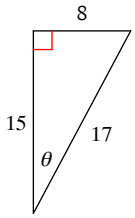
88) cos θ



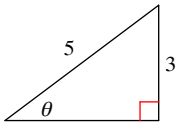
89) cos θ



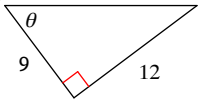
90) cos θ



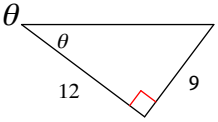
91) cot θ



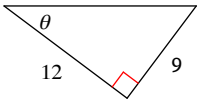
92) tan θ



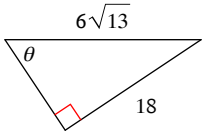
93) cos θ



94) sin θ

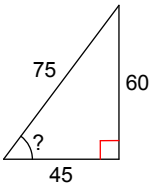


95) tan θ



Find the measure of the indicated angle to the nearest degree.

96)



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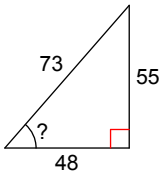

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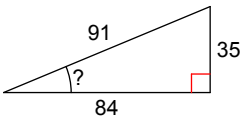

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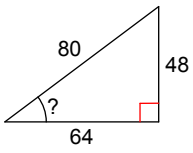

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