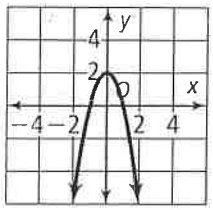
Name: _____ Class: _____ Date: _____

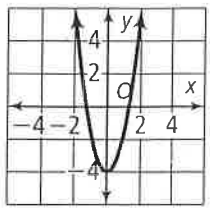
Algebra 9.1-9.4 Review

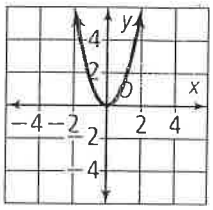
Directions: Show all work on loose-leaf paper. Simplify all answers

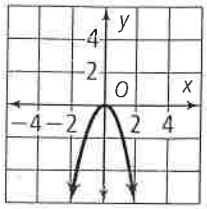
#1-4: Match each graph with its function.

1) $y = -2x^2 + 2$ 2) $y = -x^2$ 3) $y = 2x^2$ 4) $y = 3x^2 - 4$

A. 

B. 

C. 

D. 

#5 & 6) Find the line of symmetry and the vertex for each function. The line of symmetry must be written as an equation and the vertex must be written as an ordered pair.

5) $y = -4x^2 + 3$

6) $y = \frac{3}{2}x^2 - 6x + 5$

#7 & 8: Graph the function. You MUST graph and label at least 3 points where one of the ordered pairs is the vertex.

7) $y = x^2 + 4x + 1$

8) $f(x) = -3x^2 - 4$

#9-14) Find the solution(s) of the quadratic by either factoring, square roots or using the quadratic formula. If necessary, round to the nearest hundredth.

9) $3x^2 - 192 = 0$

10) $-7x^2 - 41 = 8$

11) $a^2 + 4a - 21 = 0$

12) $4x^2 - 5x = 6$

13) $x^2 - 81 = 0$

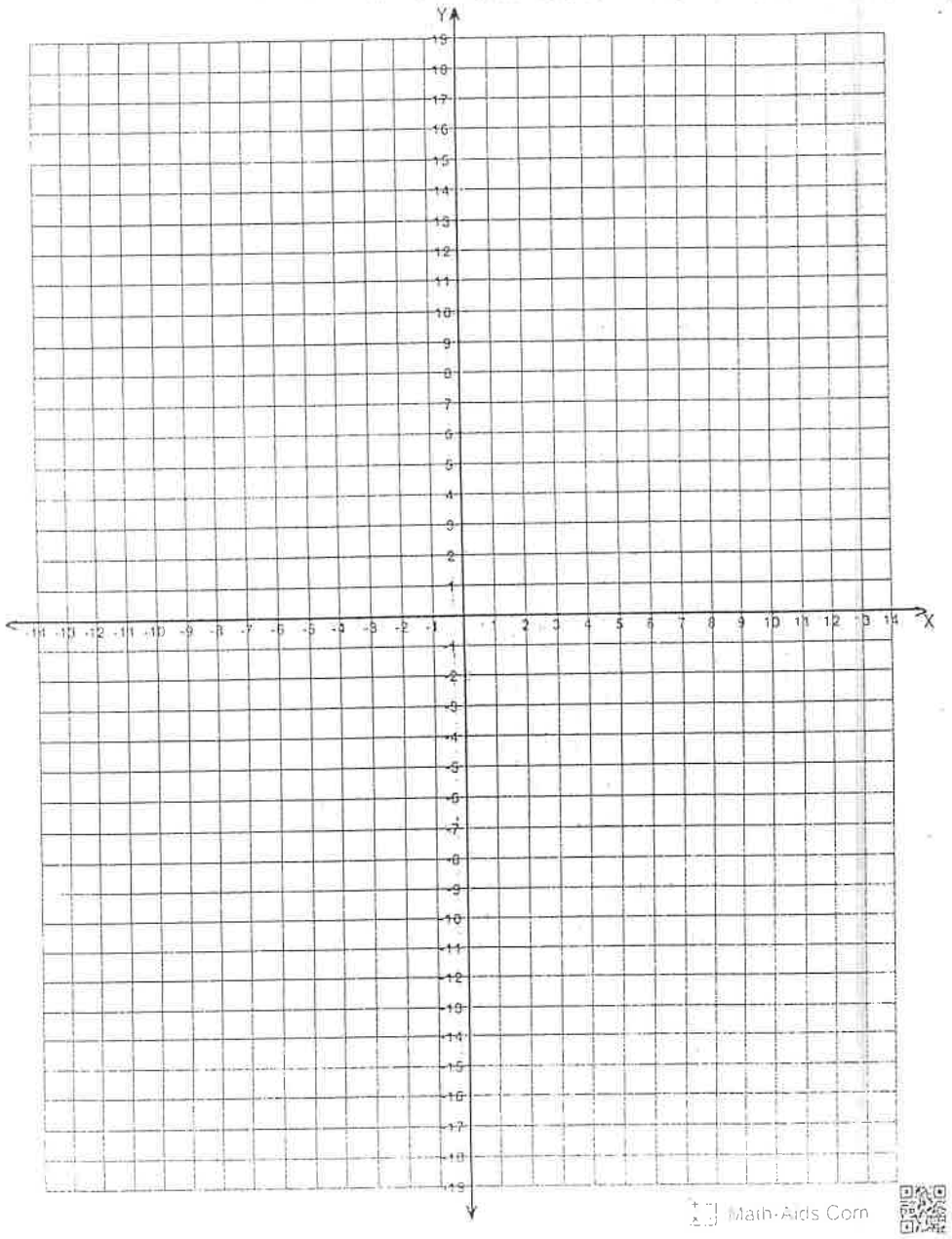
14) $4x^2 - 40x + 100$

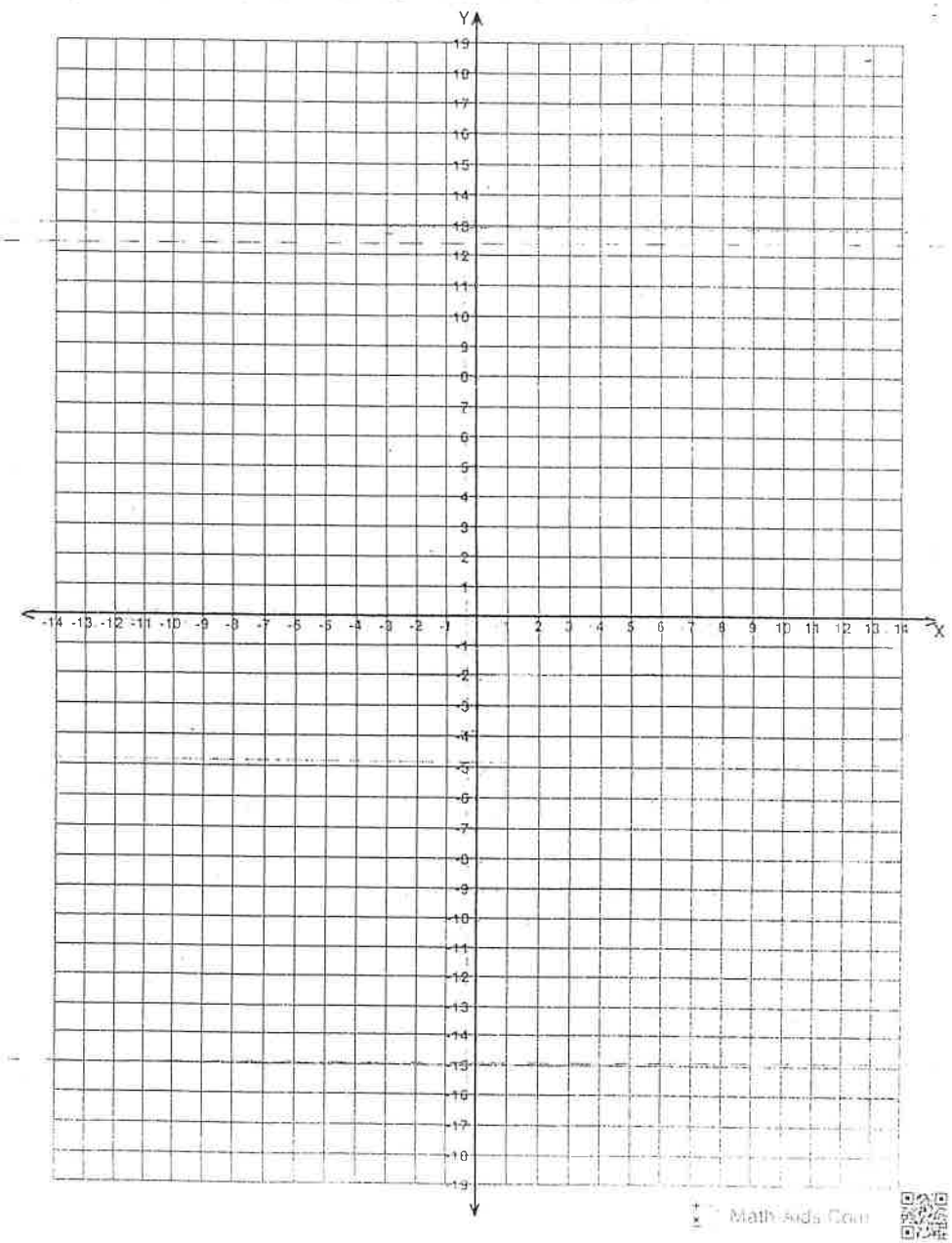
#15-17) Solve each word problem.

15) What is the radius of the largest circular quilt that can be made with an area equal to 70 ft^2? Round your answer to the nearest tenth of a foot if necessary.

16) The square yard you are mowing has an area of 9600 ft^2. What is the side length of the yard? Round your answer to the nearest tenth of a foot if necessary.

17) A golf ball is driven in the air toward the hole from an elevated tee with an upward velocity of 160 ft/s. Its height h in feet after t seconds is given by the function $h = -16t^2 + 160t + 18$. How long will it take for the golf ball to reach its maximum height? What is the ball's maximum height?





Y
X
Math-Aids.Com

Y
X

Name: _____ Class: _____ Date: _____

Algebra 9.1-9.4 Review

Directions: Show all work on loose-leaf paper. Simplify all answers

#1-4: Match each graph with its function.

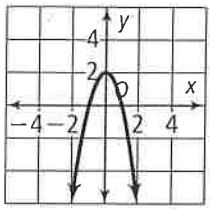
1) $y = -2x^2 + 2$ (A)

2) $y = -x^2$ (D)

3) $y = 2x^2$ (C)

4) $y = 3x^2 - 4$ (B)

A.



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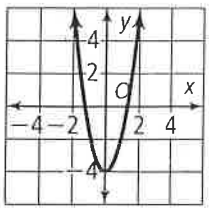

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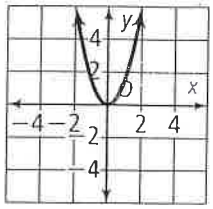
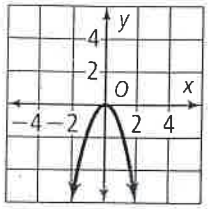


D.



#5 & 6) Find the line of symmetry and the vertex for each function. The line of symmetry must be written as an equation and the vertex must be written as an ordered pair.

5) $y = -4x^2 + 3$ $x = 0$ $(0, 3)$

6) $y = \frac{3}{2}x^2 - 6x + 5$ $x = 2$ $(2, -1)$

#7 & 8: Graph the function. You MUST graph and label at least 3 points where one of the ordered pairs is the vertex.

7) $y = x^2 + 4x + 1$ See attached

8) $f(x) = -3x^2 - 4$ See attached

#9-14) Find the solution(s) of the quadratic by either factoring, square roots or using the quadratic formula. If necessary, round to the nearest hundredth.

9) $3x^2 - 192 = 0$ ± 8

10) $-7x^2 - 41 = 8$ $\emptyset$

11) $a^2 + 4a - 21 = 0$ $\{3, -7\}$

12) $4x^2 - 5x = 6$ $\{\frac{3}{4}, 2\}$

13) $x^2 - 81 = 0$ ± 9

14) $4x^2 - 40x + 100$ 5

#15-17) Solve each word problem.

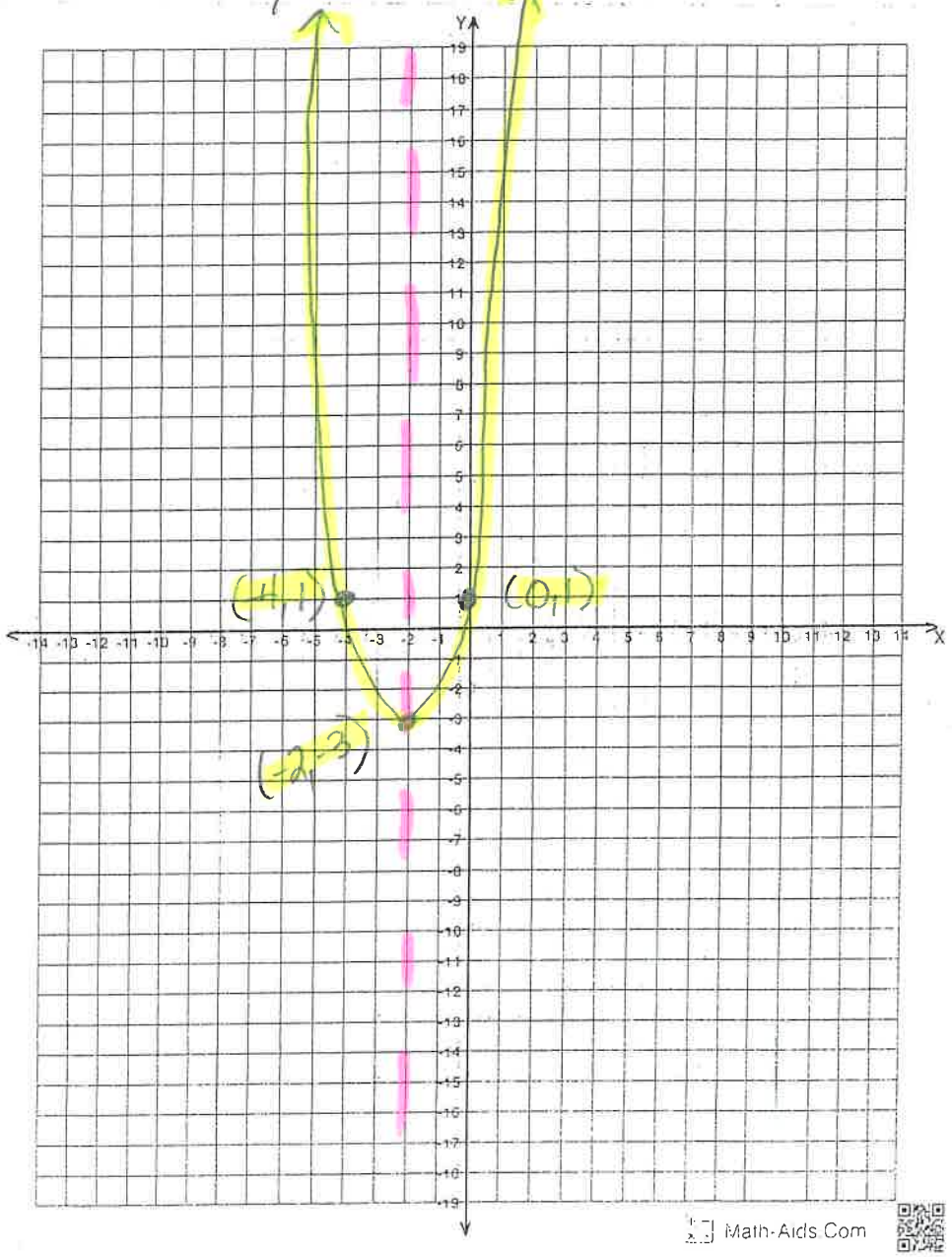
15) What is the radius of the largest circular quilt that can be made with an area ~~less than or~~ equal to 70 ft^2? Round your answer to the nearest tenth of a foot if necessary. 4.7 ft

16) The square yard you are mowing has an area of 9600 ft^2. What is the side length of the yard? Round your answer to the nearest tenth of a foot if necessary. 98 ft

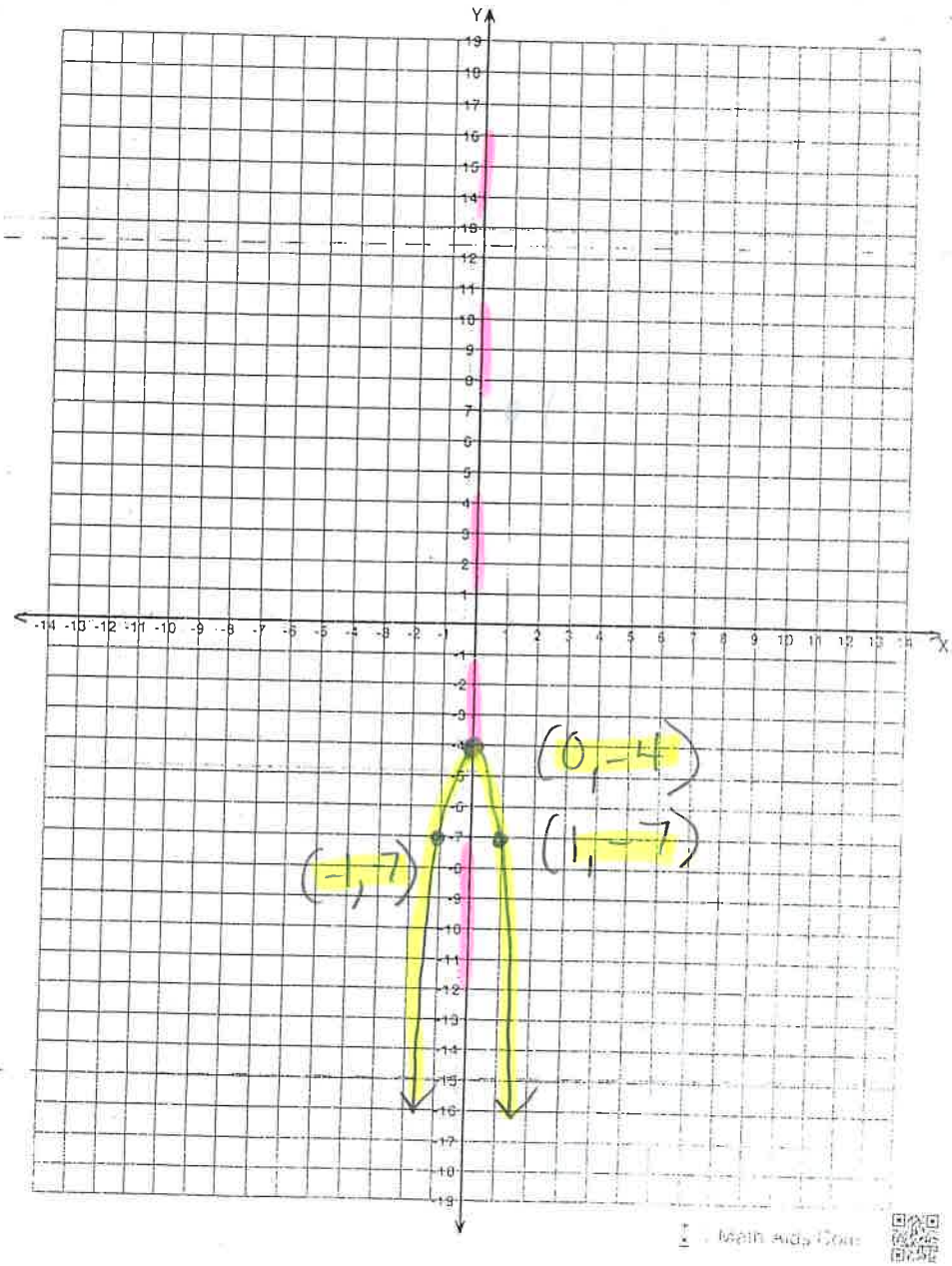
17) A golf ball is driven in the air toward the hole from an elevated tee with an upward velocity of 160 ft/s. Its height h in feet after t seconds is given by the function $h = -16t^2 + 160t + 18$. How long will it take for the golf ball to reach its maximum height? What is the ball's maximum height?

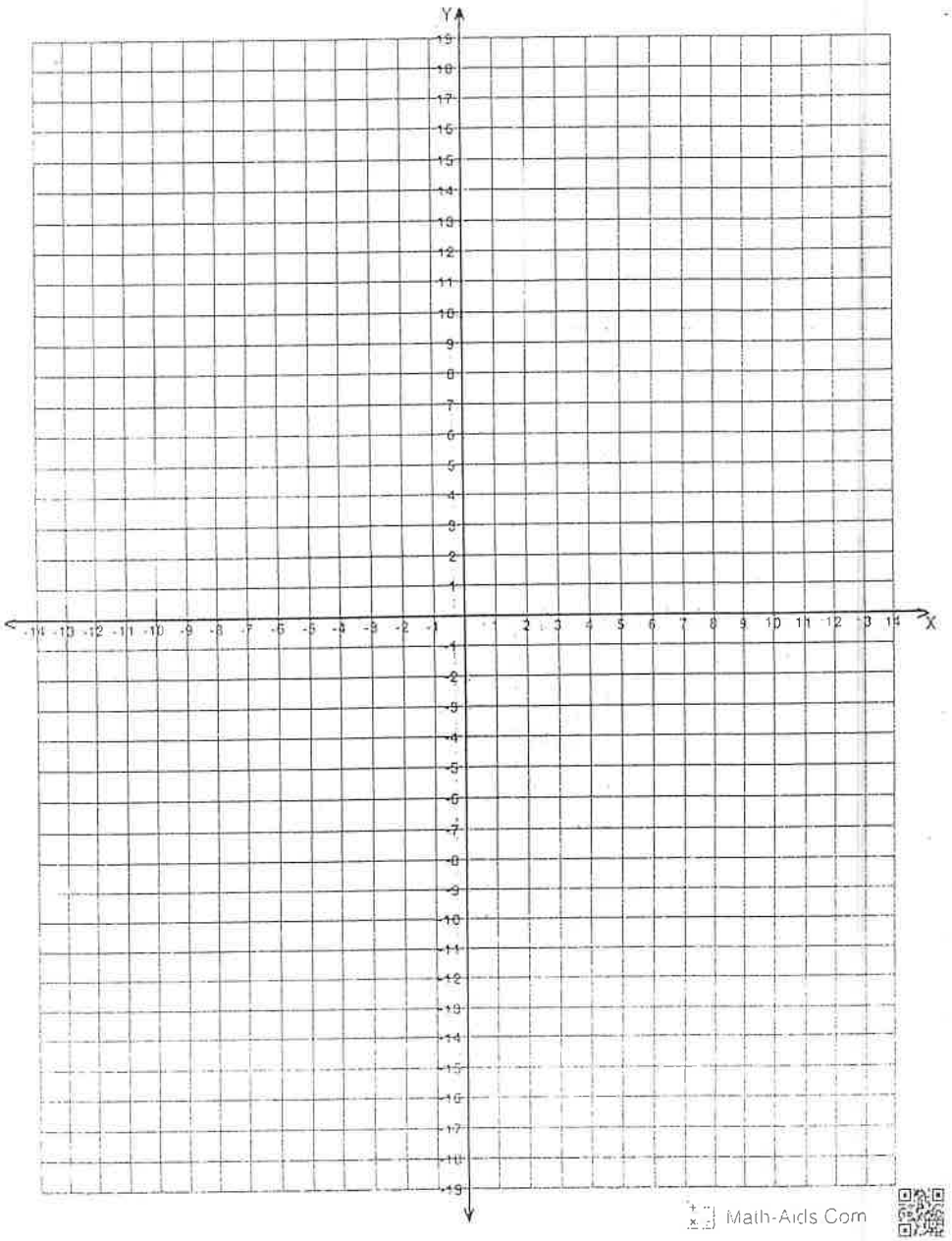
See attached.

7) $y = x^2 + 4x + 1$



8) $f(x) = -3x^2 - 4$




Y
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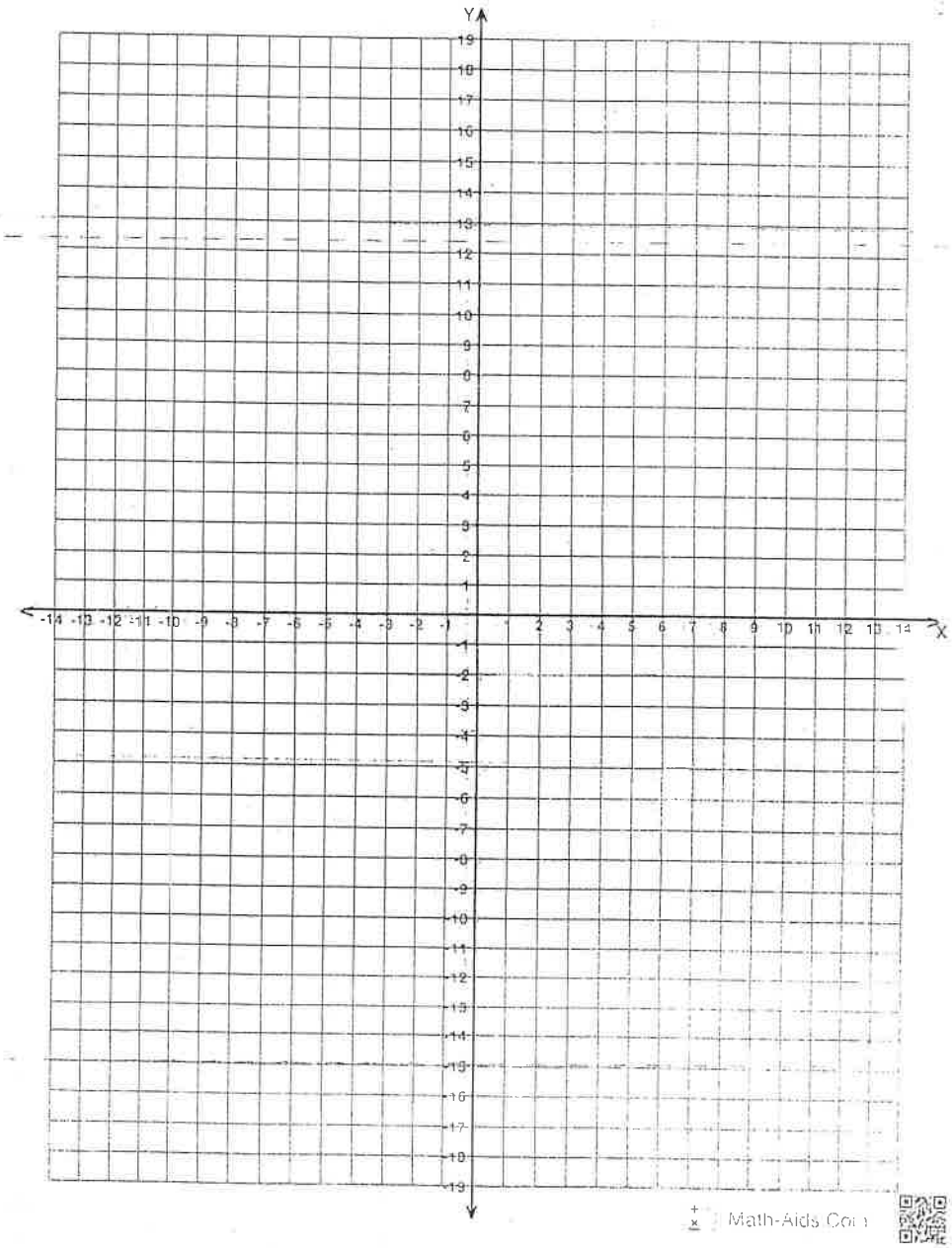
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5) $x = \frac{-b}{2a}$

$x = \frac{0}{2(-4)}$

$x = 0$

$y = -4x^2 + 3$

$y = -4(0)^2 + 3$

$y = 3$

$(0, 3)$

6) $x = \frac{-b}{2a}$

$x = \frac{6}{2(\frac{3}{2})}$

$x = \frac{6}{3}$

$x = 2$

$y = \frac{3}{2}x^2 - 6x + 5$

$y = \frac{3}{2}(2)^2 - 6(2) + 5$

$y = \frac{3}{2}(4) - 12 + 5$

$y = 6 - 12 + 5$

$y = -1$

$(2, -1)$

7) $x = \frac{-b}{2a}$

$x = \frac{-4}{2(1)}$

$x = \frac{4}{-2}$

$x = -2$

$y = x^2 + 4x + 1$

$y = (-2)^2 + 4(-2) + 1$

$y = 4 + -8 + 1$

$y = -3$

$(-2, -3)$

y-intercept $= (0, 1)$

$x = -\frac{b}{2a}$

8) $x = \frac{0}{2(1)}$

$x = 0$

$f(x) = -3x^2 - 4$

$f(x) = -3(0)^2 - 4$

$f(x) = -4$

$(0, -4)$

$y = -3x^2 - 4$

$y = -3(1)^2 - 4$

$y = -3(1) - 4$

$y = -3 - 4$

$y = -7$

$(1, -7)$

9) $3x^2 - 192 = 0$

$+192 \quad +192$

$\frac{3x^2 = 192}{3}$

$x^2 = 64$

$\sqrt{x^2} = \sqrt{64}$

$x = \pm 8$

10) $-7x^2 - 41 = 8$

$+41 \quad +41$

$\frac{-7x^2 = 49}{-7}$

$x^2 = -7$

No solution

11) $a^2 + 4a - 21 = 0$

*AC Factoring Method

$a^2 + 7a - 3a - 21 = 0$

$(a^2 + 7a) + (-3a - 21) = 0$

$a(a+7) - 3(a+7) = 0$

$(a-3)(a+7) = 0$

$a - 3 = 0$ or $a + 7 = 0$

$a = 3$ or $a = -7$

12) $4x^2 - 5x = 6$

$4x^2 - 5x - 6 = 0$

*AC Factoring Method

$4x^2 - 8x + 3x - 6 = 0$

$(4x^2 - 8x) + (3x - 6) = 0$

$4x(x-2) + 3(x-2) = 0$

$(4x+3)(x-2) = 0$

$(4x+3) = 0$ or $(x-2) = 0$

$-3 \quad -3 \qquad +2 \quad +2$

$\frac{4x = -3}{4} \qquad x = 2$

$x = -\frac{3}{4}$ or $x = 2$

13) $x^2 - 81 = 0$

$+81 \quad +81$

$x^2 = 81$

$\sqrt{x^2} = \sqrt{81}$

$x = \pm 9$

14) $4x^2+40x-100=0$

*Perfect Trinomial Squared

$(2x-10)^2=0$

$2x-10=0$

$+10 \quad +10$

$\frac{2x=10}{2}$

$x=5$

only 1 solution

15) $A=\pi r^2$

$\frac{70=\pi r^2}{\pi}$

$\sqrt{22.3}=\sqrt{r^2}$

$r=4.7$ ft

16) $A=s^2$

$\sqrt{9600}=\sqrt{s^2}$

$97.97=s$

98 ft

17) $h=-16t^2+160t+18$

$x=\frac{-b}{2a}$

$x=\frac{-160}{2(-16)}=\frac{-160}{-32}=5$

$h=-16t^2+160t+18$

$=-16(5)^2+160(5)+18$

$=-16(25)+800+18$

$=-400+800+18$

$=418$

At 5 sec. the golf ball was at a max. height of 418 ft.