

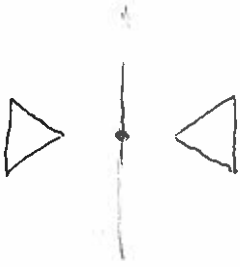
# Algebra 2

	Day	Date	Video	Assignment Due	Is it done?
11	Monday	3/30/2020		practice quiz, 9.1-4	
12	Tuesday	3/31/2020		take quiz	
13	Wednesday	4/1/2020	9.5	none	
14	Thursday	4/2/2020	9.6	403	
15	Friday	4/3/2020	9.7	406	
16	Monday	4/4/2020		409	
17	Tuesday	4/5/2020		practice quiz, 9.5-7	
18	Wednesday	4/6/2020		take quiz	
	Tuesday	4/14/2020		none	
	How many total did you do:				

Name \_\_\_\_\_

Is the figure symmetric to the given line and to the given point? Answer yes or no. (3)

1.



\_\_\_\_\_

2.



\_\_\_\_\_

3.



\_\_\_\_\_

Test for symmetry to the x-axis and the y-axis. Answer yes or no. (3)

4.  $3x + 4y^2 = 6$

\_\_\_\_\_

5.  $2x^2 + 5y^3 = 7$

\_\_\_\_\_

6.  $3x = 4y^2$

\_\_\_\_\_

Test for symmetry with respect to the origin. Answer yes or no. (2)

7.  $3x + 4y^2 = 6$

\_\_\_\_\_

8.  $4x = 5y$

\_\_\_\_\_

Determine whether each function is even, odd, or neither. (4)

9.  $f(x) = x^{13}$

\_\_\_\_\_

10.  $f(x) = x^3 + x$

\_\_\_\_\_

11.  $f(x) = x^5 + x^4$

\_\_\_\_\_

12.  $f(x) = 3$

\_\_\_\_\_

**Tell how the graph of  $f(x)$  would be transformed. (10)**

13.  $-2 + f(x)$

14.  $f(x + 2)$

15.  $3 f(x)$

16.  $f(4x)$

17.  $5 + 3 f(x)$

18.  $-2 f(x)$

19.  $f(-4x)$

20.  $-4 + f(x - 3)$

21.  $5 - 2 f(x)$

22.  $5 f(x + 1)$

**Graph on graph paper. (8)**

23.  $y = 3 + |x|$

24.  $y = |x - 2|$

25.  $y = -4 + \frac{1}{2}|x|$

26.  $y = -x^2$

27.  $y = 3x^2$

28.  $y = 1 + (x + 4)^2$

29.  $f\left(\frac{1}{2}x\right)$

30.  $-2f(x)$

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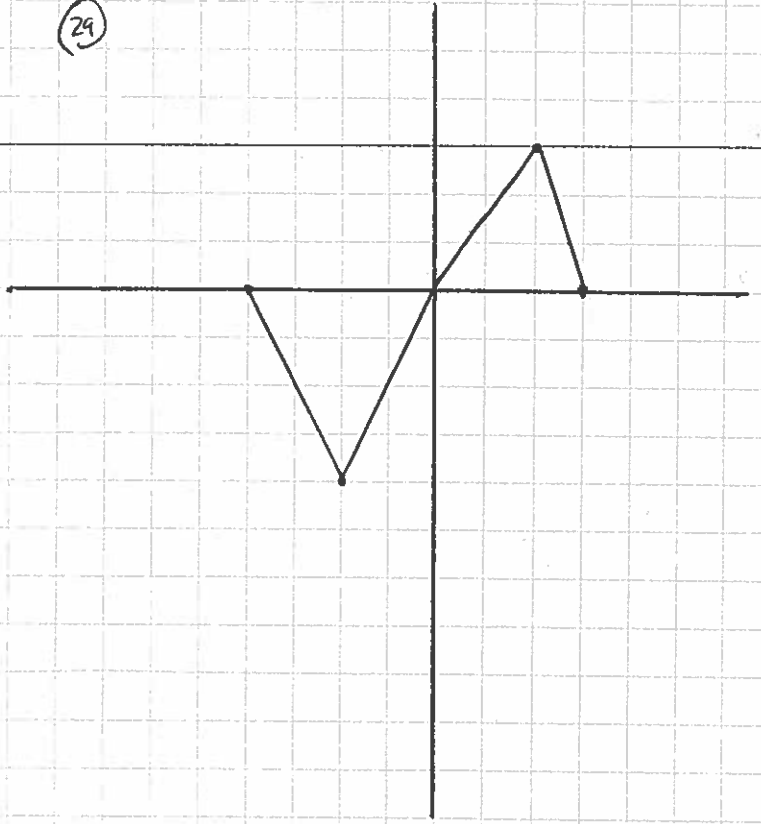
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ALG 2, 9.1-4 Quiz

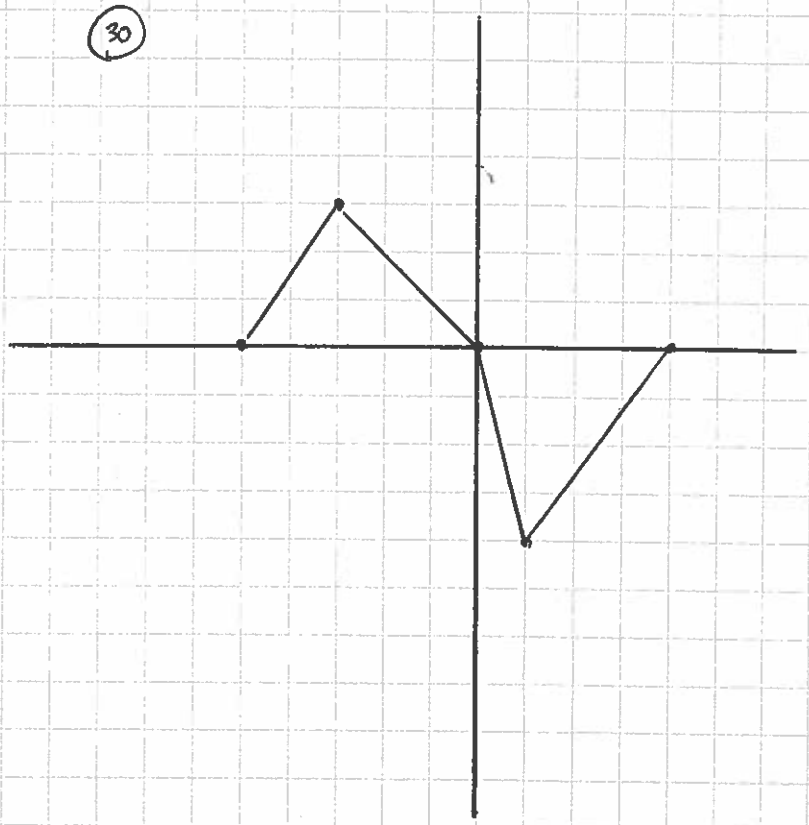
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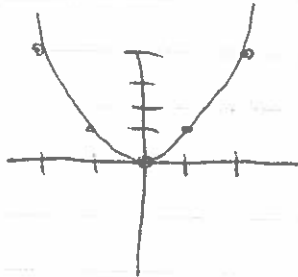
$$f(x) = x^2$$

GRAPH IS A PARABOLA (U)

VERTEX IS AT ORIGIN (0,0)

FROM THERE, GO OVER 1, UP 1  
2 4

LEFT MATCHES RIGHT (SYMMETRY)



LINE OF SYMMETRY IS  
Y-AXIS (X=0)

~~BECAUSE~~ BECAUSE IT CUTS  
IT IN HALF

MINIMUM POINT IS 0

BECAUSE THAT'S ITS  
LOWEST HEIGHT

WOULD HAVE A MAXIMUM IF  
A NEGATIVE IN FRONT  
FLOPPED IT

$$f(x) = 3(x-1)^2 + 2$$

SHIFTS RIGHT 1, UP 2  
VERTEX WOULD BE (1,2)

MINIMUM 2

LINE OF SYMMETRY IS X=1

$$f(x) = -4(x+6)^2 - 7$$

LEFT 6, DOWN 7, FLOPPED

V: (-6, -7)

LOS: X = -6

MAX: -7

$$f(x) = -2(x+4)^2 + 5$$

V: (-4, 5)

LOS: X = -4

MAX: 5

403: 1-16

STANDARD form of  $f(x) = ax^2 + bx + c$  is  
 $a(x-h)^2 + k$

WE NEED TO FACTOR TODAY BY COMPLETING  
 THE SQUARE

$$f(x) = x^2 - 6x + 4$$

$$x^2 - 6x + \underline{9} + 4 - \underline{9}$$

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

MOVE  $x^2, x$  TOGETHER  
 ADD 9 TO COMPLETE SQUARE,  
 SUBTRACT 9 TO COMPENSATE

VERTEX:  $(3, -5)$       LINE of SYMMETRY:  $x = 3$   
 MIN:  $-5$

$$f(x) = x^2 - 5x + 7$$

$$x^2 - 5x + \underline{6.25} + 7 - \underline{6.25}$$

$$(x-2.5)^2 + .75$$

V:  $(2.5, .75)$       LOS:  $x = 2.5$       MIN:  $.75$

$$f(x) = -2x^2 + 10x - 7$$

$$-2(x^2 - 5x + \underline{6.25}) - 7 + \underline{12.5}$$

$$-2(x-2.5)^2 + 5.5$$

FACTOR -2 OFF 1ST 2  
 $-2(6.25) = -12.5$ , SO  
 ADD 12.5 TO  
 COMPENSATE

V:  $(2.5, 5.5)$       LOS:  $x = 2.5$       MAX:  $5.5$   
 (BECAUSE NEG IN  
 FRONT FLIPS)

$$\begin{aligned}
 f(x) &= -4x^2 + 12x - 5 \\
 &= -4(x^2 - 3x + \frac{225}{16}) - 5 + 9 \\
 &= -4(x - 1.5)^2 + 4
 \end{aligned}$$

$$V = (1.5, 4) \quad \text{LOS: } x = 1.5 \quad \text{MAX} = 4$$

$$\begin{aligned}
 f(x) &= -x^2 + 6x + 4 \\
 &= -(x^2 - 6x + 9) + 4 + 9 \\
 &= -(x - 3)^2 + 13
 \end{aligned}$$

$$V = (3, 13) \quad \text{LOS: } x = 3 \quad \text{MAX} = 13$$

406: 1-12

$$\begin{aligned}
 y &= 4x^2 + 2x - 1 \\
 &= 4(x^2 + \frac{1}{2}x + \frac{1}{16}) - 1 - \frac{1}{4} \\
 &= 4(x + \frac{1}{4})^2 - \frac{5}{4}
 \end{aligned}$$

$$V = (-\frac{1}{4}, -\frac{5}{4}) \quad \text{LOS: } x = -\frac{1}{4} \quad \text{MIN: } -\frac{5}{4}$$

# Alg 2, 9.7 Notes, X-INTERCEPTS

THINGS TO REMEMBER FROM OLD LESSONS:  
X-INTERCEPTS ARE POINTS WHERE A GRAPH TOUCHES THE X-AXIS.  
WHEN A GRAPH TOUCHES THE X-AXIS, THE Y-COORDINATE IS 0.  
 $f(x)$  IS THE SAME THING AS  $y$

TODAY, YOU ARE SUPPOSED TO FIND X-INTERCEPTS OF EQUATIONS LIKE  $f(x) = x^2 - 3x - 4$ . TO DO THIS, REPLACE  $f(x)$  WITH 0 TO GET  $0 = x^2 - 3x - 4$ , AND THEN SOLVE

MORE THINGS TO REMEMBER:  
EQUATIONS WITH  $x^2$  ARE CALLED "QUADRATIC" TO SOLVE, GET THEM TO EQUAL 0 (WHICH THEY AUTOMATICALLY WILL TODAY AFTER YOU REPLACE  $f(x)$  WITH 0 LIKE YOU'RE SUPPOSED TO) THEN FACTOR IF YOU CAN, AND DO THE QUADRATIC FORMULA IF YOU CAN'T.

$$\frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

FOR THE PROBLEM ABOVE WITH  $0 = x^2 - 3x - 4$ , YOU CAN FACTOR TO GET  $(x-4)(x+1)$ .  $x$  COULD BE 4, OR  $x$  COULD BE -1. SINCE FOR X-INTERCEPTS THE  $y$  IS ALWAYS 0 OUR ANSWERS ARE

$(4, 0)$  AND  $(-1, 0)$

→  
OVER



•  $f(x) = x^2 + 6x + 9$

PUT  $= 0$  FOR  $f(x)$

FACTORS

FIGURE OUT  $x$

WRITE ORDERED PAIR WITH  $y$

$$0 = x^2 + 6x + 9$$

$$(x+3)^2$$

$$x = -3$$

ALWAYS 0

$$\boxed{(-3, 0)}$$

•  $f(x) = 6x^2 - 2x - 2$

PUT 0 FOR  $f(x)$

DO QUADRATIC  $a=6$   
BECAUSE IT CAN'T FACTOR  $b=-2$   $c=-2$

SIMPLIFY UNDER  $\sqrt{\quad}$

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

$$\frac{2 \pm \sqrt{4 - 4(6)(-2)}}{12}$$

$$\frac{2 \pm \sqrt{52}}{12}$$

SIMPLIFY  $\sqrt{52}$  (4 GOES IN 13 TIMES)

$$\frac{2 \pm 2\sqrt{13}}{12}$$

DIVIDE ~~6~~ INTO BOTH  
#1'S ON TOP AND #0- BOTTOM

WRITE AS ORDERED PAIR

$$\frac{1 \pm \sqrt{13}}{6}$$

$$\boxed{\left(\frac{1 \pm \sqrt{13}}{6}, 0\right)}$$

•  $f(x) = x^2 - 3x + 4$

PUT 0 FOR  $f(x)$

DOESN'T FACTOR, SO QUADRATIC

UNDER THE  $\sqrt{\quad}$  WOULD BE

NEGATIVE AND WE WILL NOT

DO IT'S WITH THIS, SO

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

$$\frac{3 \pm \sqrt{9 - 16}}{2}$$

$\boxed{\text{NO ANSWER}}$

DO 409: 1-15

Name \_\_\_\_\_

Practice, Algebra 2, 9.5-7

Find the vertex, line of symmetry, and the max or min. (10)

1.  $f(x) = (x + 8)^2 + 4$

\_\_\_\_\_

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

\_\_\_\_\_

3.  $f(x) = -8(x - 1)^2 - 2$

\_\_\_\_\_

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

\_\_\_\_\_

5.  $f(x) = 5(x + 7)^2 - 1$

\_\_\_\_\_

6.  $f(x) = -2(x + 3)^2 - 6$

\_\_\_\_\_

7.  $f(x) = -4(x - 7)^2 + 5$

\_\_\_\_\_

8.  $f(x) = (x + 2)^2 + 3$

\_\_\_\_\_

9.  $f(x) = -(x + 5)^2 - 7$

\_\_\_\_\_

10.  $f(x) = (x - 3)^2 + 4$

\_\_\_\_\_

Complete the square to get an equation in the form  $f(x) = a(x - h)^2 + k$ . (5)

11.  $f(x) = x^2 + 6x + 5$

\_\_\_\_\_

12.  $f(x) = x^2 + 5x - 2$

\_\_\_\_\_

13.  $f(x) = -x^2 - 4x + 2$

\_\_\_\_\_

14.  $f(x) = -2x^2 - 6x + 5$

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15.  $f(x) = -3x^2 + 12x + 3$

---

**Find the x-intercepts. (5)**

16.  $f(x) = x^2 + 7x + 12$

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17.  $f(x) = x^2 + x + 1$

---

18.  $f(x) = x^2 - 5x - 6$

---

19.  $f(x) = 2x^2 + 5x + 4$

---

20.  $f(x) = 3x^2 + 12x - 3$

---

Name \_\_\_\_\_

Quiz, Algebra 2, 9.5-7

Find the vertex, line of symmetry, and the max or min. (10)

1.  $f(x) = (x + 3)^2 + 2$

\_\_\_\_\_

2.  $f(x) = 5(x - 6)^2 - 7$

\_\_\_\_\_

3.  $f(x) = -3(x - 4)^2 - 5$

\_\_\_\_\_

4.  $f(x) = -(x - 1)^2 + 2$

\_\_\_\_\_

5.  $f(x) = 5(x + 4)^2 - 3$

\_\_\_\_\_

6.  $f(x) = -4(x + 3)^2 - 2$

\_\_\_\_\_

7.  $f(x) = -5(x - 6)^2 + 7$

\_\_\_\_\_

8.  $f(x) = (x + 2)^2 + 3$

\_\_\_\_\_

9.  $f(x) = -(x + 2)^2 - 3$

\_\_\_\_\_

10.  $f(x) = (x - 3)^2 + 4$

\_\_\_\_\_

Complete the square to get an equation in the form  $f(x) = a(x - h)^2 + k$ . (5)

11.  $f(x) = x^2 + 4x + 5$

\_\_\_\_\_

12.  $f(x) = x^2 + 3x - 2$

\_\_\_\_\_

13.  $f(x) = -x^2 - 8x + 2$

\_\_\_\_\_

14.  $f(x) = -2x^2 - 8x + 5$

---

15.  $f(x) = -3x^2 + 9x + 3$

---

**Find the x-intercepts. (5)**

16.  $f(x) = x^2 + 2x + 6$

---

17.  $f(x) = x^2 + 2x + 1$

---

18.  $f(x) = x^2 - x - 6$

---

19.  $f(x) = 2x^2 + 5x + 2$

---

20.  $f(x) = 3x^2 + 5x - 3$

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Name \_\_\_\_\_

Practice Test, Algebra 2, Chapter 9

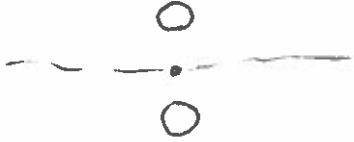
Is the figure symmetric to the given line and to the given point? Answer yes or no. (3)

1.



\_\_\_\_\_

2.



\_\_\_\_\_

3.



\_\_\_\_\_

Test for symmetry to the x-axis and the y-axis. Answer yes or no. (3)

4.  $3x + 4y^2 = 6$

\_\_\_\_\_

5.  $2x^2 + 5y = 7$

\_\_\_\_\_

6.  $3x = 4y$

\_\_\_\_\_

Test for symmetry with respect to the origin. Answer yes or no. (2)

7.  $3x + 4y = 6$

\_\_\_\_\_

8.  $4x = 5y$

\_\_\_\_\_

**Determine whether each function is even, odd, or neither. (4)**

9.  $f(x) = x^{11}$

---

10.  $f(x) = x^4 + x$

---

11.  $f(x) = x^6 + x^2$

---

12.  $f(x) = 0$

---

**Tell how the graph of  $f(x)$  would be transformed. (10)**

13.  $3 + f(x)$

---

14.  $f(x + 4)$

---

15.  $6 f(x)$

---

16.  $f(2x)$

---

17.  $-5 + 3 f(x)$

---

18.  $-2 f(x)$

---

19.  $f(-4x)$

---

20.  $-2 + f(x - 4)$

---

21.  $3 + 3 f(x)$

---

22.  $-5 f(x - 2)$

---

**Graph on graph paper. (8)**

23.  $y = -4 + |x|$

24.  $y = |x - 5|$

25.  $y = 2 + \frac{1}{3}|x|$

26.  $y = -x^2$

27.  $y = 3x^2$

28.  $y = -4 + (x - 8)^2$

29.  $f\left(\frac{1}{2}x\right)$

30.  $f(-2x)$



**Find the vertex, line of symmetry, and the max or min. (10)**

31.  $f(x) = (x + 4)^2 + 3$

\_\_\_\_\_

32.  $f(x) = 6(x - 7)^2 - 8$

\_\_\_\_\_

33.  $f(x) = -5(x - 4)^2 - 3$

\_\_\_\_\_

34.  $f(x) = -(x - 1)^2 + 2$

\_\_\_\_\_

35.  $f(x) = 2(x + 4)^2 - 6$

\_\_\_\_\_

36.  $f(x) = -(x + 3)^2 - 5$

\_\_\_\_\_

37.  $f(x) = -9(x - 7)^2 + 5$

\_\_\_\_\_

38.  $f(x) = 8(x + 4)^2 + 2$

\_\_\_\_\_

39.  $f(x) = -(x + 4)^2 - 9$

\_\_\_\_\_

40.  $f(x) = (x - 1)^2 + 1$

\_\_\_\_\_

**Complete the square to get an equation in the form  $f(x) = a(x - h)^2 + k$ . (5)**

41.  $f(x) = x^2 + 3x + 5$

\_\_\_\_\_

42.  $f(x) = x^2 + 6x - 2$

\_\_\_\_\_

43.  $f(x) = -x^2 - 12x + 22$

\_\_\_\_\_

44.  $f(x) = -2x^2 - 10x + 5$

\_\_\_\_\_

45.  $f(x) = -3x^2 + 6x + 2$

---

**Find the x-intercepts. (5)**

46.  $f(x) = x^2 - 6x + 9$

---

47.  $f(x) = x^2 + 3x + 4$

---

48.  $f(x) = x^2 - 2x - 8$

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49.  $f(x) = 2x^2 + 5x + 4$

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50.  $f(x) = 3x^2 + 4x - 3$

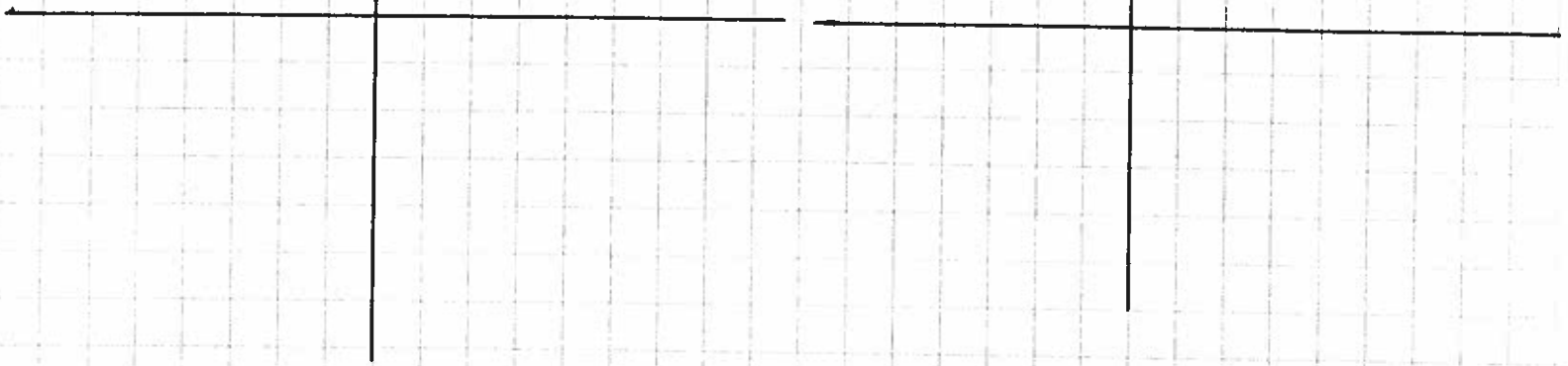
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PRACTICE QUIZ, 9.1-4/  
PRACTICE TEST, CH 9

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