

Graphing Quadratic Functions

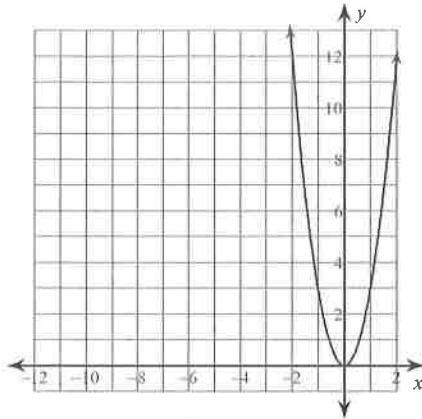
T4-1

Name Key

Date _____ Period _____

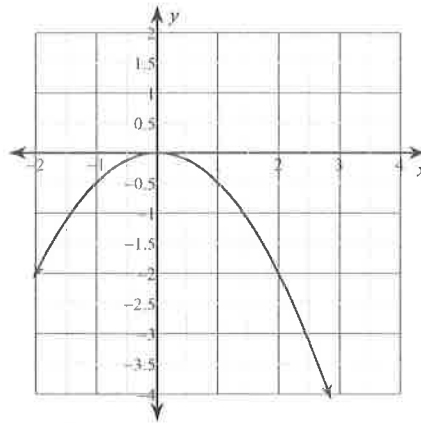
Sketch the graph of each function.

1) $y = 3x^2$



y-int (0,0)
 AOS $x=0$
 vertex (0,0)

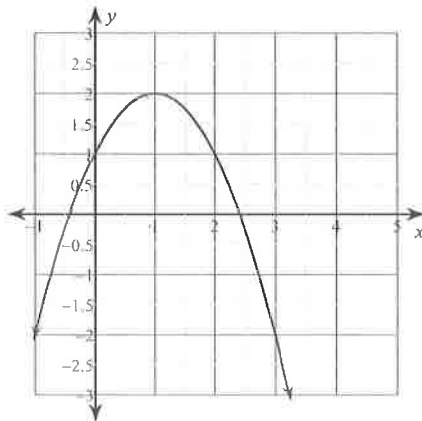
2) $y = -\frac{1}{2}x^2$



(0,0)
 $x=0$
 (0,0)

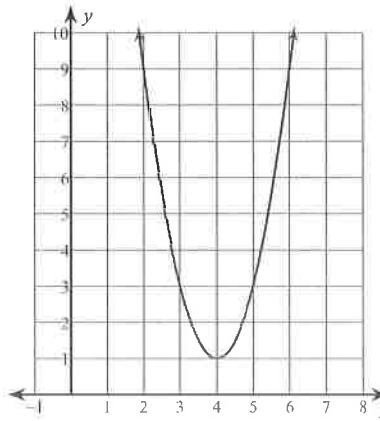
→ tables and work not shown here, but needed on YOUR paper 😊

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



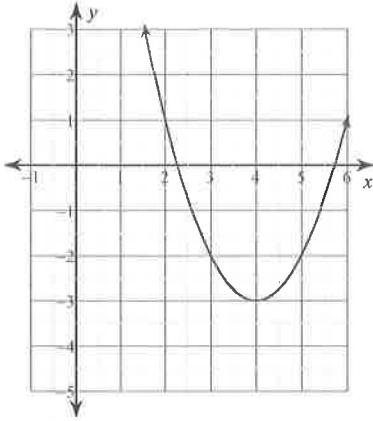
(0,1) y-int
 $x=1$ AOS
 (1,2) vertex

4) $y = 2x^2 - 16x + 33$



(0,33) y-int
 $x=4$ AOS
 (4,1) vertex

5) $y = x^2 - 8x + 13$

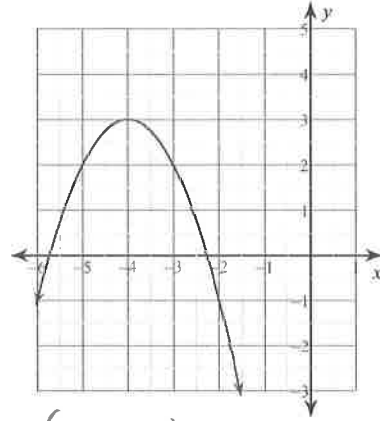


$(0, 13)$ y-int

$X = 4$ AOS

$(4, -3)$ vertex

6) $y = -x^2 - 8x - 13$

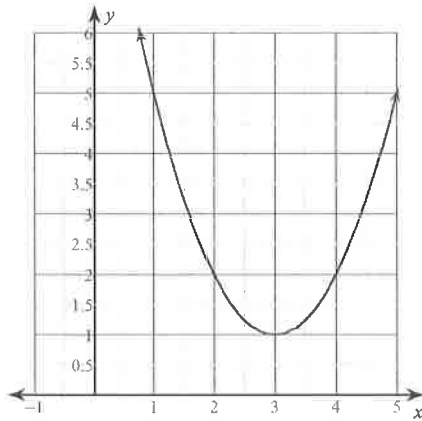


$(0, -13)$ y-int

$X = -4$ AOS

$(-4, 3)$ vertex

7) $y = (x - 3)^2 + 1$



$y = x^2 - 6x + 9 + 1$

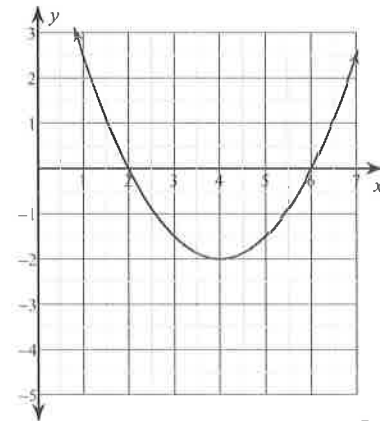
$y = x^2 - 6x + 10$

$(0, 10)$

AOS $X = 3$

vertex $(3, 1)$

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



$y = \frac{1}{2}(x^2 - 8x + 16) - 2$

$y = \frac{1}{2}x^2 - 4x + 8 - 2$

$\frac{1}{2}x^2 - 4x + 6$

$(0, 6)$ y-int

$X = 4$ AOS

$(4, -2)$ vertex

Target

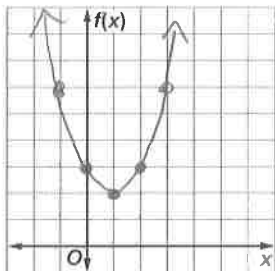
4-2

Skills Practice

Solving Quadratic Equations by Graphing

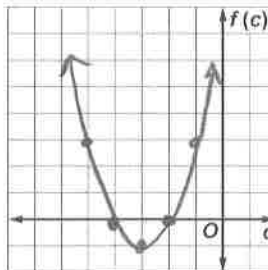
Solve each equation by graphing. State the solutions! $x = x =$

1. $x^2 - 2x + 3 = 0$



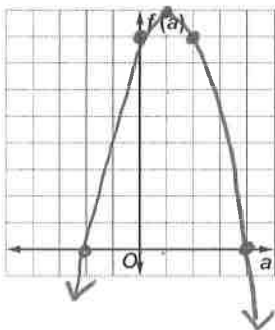
imaginary

2. $c^2 + 6c + 8 = 0$



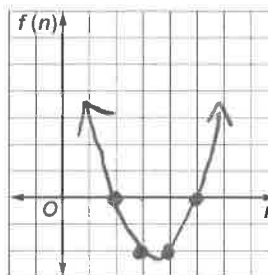
$x = -2$
 $x = -4$

3. $-a^2 + 2a = -8$



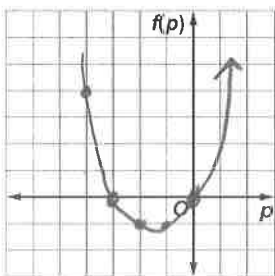
$x = 4$
 $x = -2$

4. $n^2 - 7n = -10$



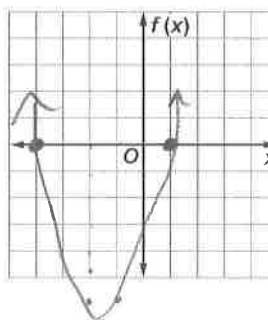
$x = 2$
 $x = 5$

5. $p^2 + 3p = 0$



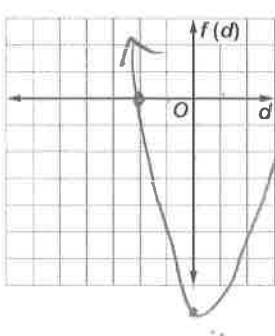
$x = -3$
 $x = 0$

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



$x = -4$
 $x = 1$

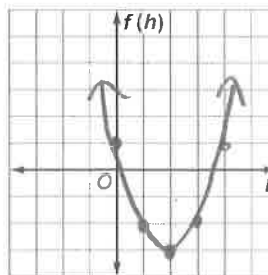
7. $x^2 - 2x = 8$



$x = -2$
 $x = 4$

8. $h^2 + 1 = 4h$

$h^2 - 4h + 1 = 0$



not accurate w/ graph

Lesson 4-2

incorrectly
says 4-3

Key

Operations with Complex Numbers T4-4

Date

Period

Simplify.

1) $i + 6i$

$7i$

2) $3 + 4 + 6i$

$7 + 6i$

3) $3i + i$

$4i$

4) $-8i - 7i$

$-15i$

5) $-1 - 8i - 4 - i$

$-5 - 9i$

6) $7 + i + 4 + 4$

$15 + i$

7) $-3 + 6i - (-5 - 3i) - 8i$

$2 + i$

8) $3 + 3i + 8 - 2i - 7$

$4 + i$

9) $4i(-2 - 8i)$

$32 - 8i$

10) $5i \cdot -i$

5

11) $5i \cdot i \cdot -2i$

$10i$

12) $-4i \cdot 5i$

20

13) $(-2 - i)(4 + i)$

$-7 - 6i$

14) $(7 - 6i)(-8 + 3i)$

$-38 + 69i$

15) $7i \cdot 3i(-8 - 6i)$

$168 + 126i$

16) $(4 - 5i)(4 + i)$

$21 - 16i$

$$17) (2 - 4i)(-6 + 4i)$$

$$4 + 32i$$

$$18) (-3 + 2i)(-6 - 8i)$$

$$34 + 12i$$

$$19) (8 - 6i)(-4 - 4i)$$

$$-56 - 8i$$

$$20) (1 - 7i)^2$$

$$-48 - 14i$$

$$21) 6(-7 + 6i)(-4 + 2i)$$

$$96 - 228i$$

$$22) (-2 - 2i)(-4 - 3i)(7 + 8i)$$

$$-98 + 114i$$

$$23) 5i + 7i \cdot i$$

$$-7 + 5i$$

$$24) (6i)^3$$

$$-216i$$

$$25) 6i \cdot -4i + 8$$

$$32$$

$$26) -6(4 - 6i)$$

$$-24 + 36i$$

$$27) (8 - 3i)^2$$

$$55 - 48i$$

$$28) 3 + 7i - 3i - 4$$

$$-1 + 4i$$

$$29) -3i \cdot 6i - 3(-7 + 6i)$$

$$39 - 18i$$

$$30) -6i(8 - 6i)(-8 - 8i)$$

$$-96 + 672i$$

Critical thinking questions:

31) How are the following problems different?

Simplify: $(2 + x)(3 - 2x)$

Simplify: $(2 + i)(3 - 2i)$

$i^2 = -1$ so it leads to a few more steps

32) How are the following problems different?

Simplify: $2 + x - (3 - 2x)$

Simplify: $2 + i - (3 - 2i)$

There is no difference.