2017 *ALGEBRA 2* 2018
WEEKLY ASSIGNMENT SHEET FOR
MAY. 21 TO MAY. 25
FOURTH QUARTER (Q4). WEEK 8 OF 9. (Q4-8)

INSTRUCTOR: MR. ANDRUS.   ROOM: 514

CONTINUING OBJECTIVES:
1. *Improve organization skills.*
2. *Move from memorizing and repeating to applying and thinking.*
3. *Read, write and interpret math statements.*
4. *Use mistakes as opportunities to learn.*
5. *Expand successes and build up weaknesses. Continue to move forward.*

SCCCR STANDARDS:
1. *IA-1.1 - Communicate knowledge of algebraic relationships by using mathematical terminology appropriately.*
2. *IA-1.2 -Connect algebra with other branches of mathematics.*
3. *IA-1.3 -Apply algebraic methods to solve problems in real-world contexts.*
4. *IA-1.4 -Judge the reasonableness of mathematical solutions.*
5. *IA-1.5 - Demonstrate an understanding of algebraic relationships by using a variety of representations (including verbal, graphic, numerical, and symbolic).*
6. *IA-1.6 -Understand how algebraic relationships can be represented in concrete models, pictorial models, and diagrams.*
7. *IA-1.7 -Understand how to represent algebraic relationships by using tools such as handheld computing devices.*

MONDAY (IF YOU DID NOT ATTEND LAST FRIDAY'S CLASS.)→ →
1. After this week, what % of Q4 is complete? What % of S2 grade is complete?
2. Complete all problems on worksheet Q4-8 Monday.
3. Take/re-take objective test q4 final until $\geq 80\%$.
4. Re-try District MC Exam Practice problems from problem solving q4-7, without notes. Then use notes to correct and update the problems.

Check your last week's assignment sheet for Friday's work. Complete this work to prepare for this week's assessment. ☺☺☺

TUESDAY (IF YOU DID NOT ATTEND CLASS ON MONDAY)→→
1. Grade/UPDATE/discuss Monday's work.
2. Complete all problems on worksheet Q4-8 Tuesday.
3. Take/re-take objective test q4 final until $\geq 80\%$.
4. Re-try District MC Exam Practice problems from problem solving q4-7, without notes. Then use notes to correct and update the problems.

Please complete Monday's assignments. Use them to prepare for the assessment. ☺☺☺

WEDNESDAY (IF YOU DID NOT ATTEND CLASS ON TUESDAY)→→
1. Grade/UPDATE/discuss Tuesday's work..
2. Complete test review sheet.
3. Journal: explain how to get off the island.
          Hint: read the cover page of your note book.

Please complete Tuesday's assignments and use them to prepare for the assessment. ☺☺☺

THURSDAY (IF YOU DID NOT ATTEND CLASS ON WEDNESDAY)→
1. Grade/UPDATE/discuss Wednesday's work. Review.
2. **Complete Weekly Test in Aleks.**
3. **You may use all note pages on this assessment.**
4. **If you did not attend class yesterday, your first take will count as your new test problems. Your 2nd take will count as your test score. Additional takes will be updates.**

Please complete Wednesday's assignments and use them to prepare for the weekly assessment. ☺☺☺

FRIDAY (IF YOU DID NOT ATTEND CLASS ON THURSDAY)→→
1. Update yesterday's test in Aleks.
2. Problem solving Q4-8. Turn in before leaving class.

Please complete the weekly assessment today. ☺☺☺

Worksheet Q4-8 Monday. Cumulative test practice.

Select the best answer.

1. Which of these is the domain and range for the parent function of $6\sqrt{x-4}+11$?

   A Domain: $x \geq 0$ Range: $y \geq 0$

   B Domain: all real numbers Range: all real numbers

   C Domain: all real numbers Range: $y \geq 0$

   D Domain: $x \geq 0$ Range: $y \leq 0$

2. Which are the coordinates of the transformed point?

   (30, 45); vertical compression of $\dfrac{1}{15}$

   F (2, 3)   H (6, 18)

   G (30, 3)   J (6, 6)

3. Which completes the table of the transformed function?
   Reflection across x-axis

X	y	
1	2	
4	3	
9	4	
16	5	
25	6	

   A $-1, -4, -9, -16, -25$

   B 1, 4, 9, 16, 25

   C $-2, -3, -4, -5, -6$

   D 6, 5, 4, 3, 2

4. Which of these is the parent function?

   $\dfrac{(x-7)^3}{2}+4$

   F x^3 H x

   G $\sqrt{x}$ J $x-1$

5. Which of these is the parent function?

   $\dfrac{5x^2+10x+5}{2}$

   A x C x^2

   B $5(x+1)^2$ D $x+1$

6. Which of these describes the transformation in terms of $f(x)$?
   Vertical shift up 9 units

   F $f(x-9)$ H $f(x+9)$

   G $f(x)+9$ J $f(x)-9$

7. Which transformation describes the equation from its parent equation?

   $f(x)+\dfrac{1}{15}$

   A horizontal shift right $\dfrac{1}{15}$ unit

   B vertical compression by a factor of $\dfrac{1}{15}$

   C vertical shift down $\dfrac{1}{15}$ unit

   D vertical shift up $\dfrac{1}{15}$ units

8. Which of these describes the transformation in terms of $f(x)$?
   Vertical stretch by a factor of 19

   F $\dfrac{1}{19}f(x)$ H $f(x)-19$

   G $f(x-19)$ J $19f(x)$

9. Which transformation describes the equation from its parent equation?

   $f(x)=\sqrt{x}-3$

   A horizontal shift right 3 units
   B vertical shift up 3 units
   C horizontal shift left 3 units
   D vertical shift down 3 units

10. Using $f(x)=\sqrt{x}$ as a guide. What is the transformation that yields

    $f(x)=6\sqrt{x-2}-10$?

    F vertical stretch of 6, shift 2 units right and 10 units up

    G shift 72 units right and 10 units down

    H vertical stretch of 6, shift 2 units right and 10 units down

    J vertical stretch of 6, shift 2 units right and 10 units up

Worksheet Q4-8 Monday cont.

11. Consider $h(x) = 3x^2 + 18x + 4$. What is its vertex and y-intercept?
    A vertex: (–2, –20), y-intercept: (0, 4)
    B vertex: (–2, 20), y-intercept: (0, –4)
    C vertex: (–3, –23), y-intercept: (0, 4)
    D vertex: (–3, –23), y-intercept: (0, –4)

12. What is the minimum or maximum of $g(x) = 16x^2 + 8x + 17$?

    F minimum: 20

    G maximum: 20

    H minimum: 16

    J maximum: 16

13. What are the zeros of the trinomial $3x^2 - 8x + 4$?

    A $-2, -\dfrac{2}{3}$

    B $-\dfrac{2}{3}, 2$

    C $-2, \dfrac{2}{3}$

    D $\dfrac{2}{3}, 2$

14. What is a quadratic function in standard form having zeros of –2 and 3?
    F $f(x) = (x+2)(x-3)$

    G $f(x) = x^2 - x - 6$

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

    J $f(x) = (x-2)(x+3)$

15. What is the simplified version of $-i^{21}\sqrt{-16}$?
    A –4i   C 4
    B 4i   D –4

16. What is the simplified version of $i^{22}\sqrt{144}$?
    F 12i   H –12
    G –12i   J 12

17. Use the quadratic formula to solve $9x^2 + 36$.

    A $x = \pm 2$

    B $x = \pm 2i$

    C $x = \dfrac{1}{2}, 2$

    D $x = -2, 2i$

18. For a quadratic equation with discriminant $(-8)^2 - 4 \cdot 8 \cdot 2$, what is the number of solutions and their type(s)?
    F 2 imaginary solutions
    G 1 real solution
    H 2 real solutions
    J 1 imaginary solution

19. For a quadratic equation with discriminant $(-4)^2 - 4 \cdot 1 \cdot 5$, what is the number of solutions and their type(s)?
    A 2 real solutions
    B 1 imaginary solution
    C 2 imaginary solutions
    D 1 real solution

20. Simplify $\left(i\sqrt{9} - 2\right)\left(i\sqrt{9} + 2\right)$.
    F –13   H –7
    G $i\sqrt{18} - 4$ J –85

21. Which of these are the asymptotes of $\dfrac{x^2 + 6x + 9}{x - 1}$?
    A $x = 1$ C $y = 1, x = 0$
    B $x = -1, y = 1$ D $x = 1, y = 0$

Worksheet Q4-8 Tuesday.
Cumulative test practice.

22. Find the minimum or maximum of
    $g(x) = 4x^2 - 12x + 7$.

    F maximum of -2

    G maximum of 7

    H minimum of -2

    J minimum of 7

23. Write a quadratic function in standard
    form having zeros of 4 and $-\dfrac{1}{2}$.

    A $a(x) = 2x^2 - 7x - 4$

    B $b(x) = 2x^2 - 7x + 4$

    C $c(x) = 2x^2 + 7x - 4$

    D $d(x) = 2x^2 + 7x + 4$

24. Write $f(x) = x^2 + 4x - 9$ in vertex form.

    F $f(x) = (x + 2)^2 - 13$

    G $f(x) = (x + 2)^2 - 9$

    H $c(x) = (x + 4)^2 - 13$

    J $c(x) = (x + 4)^2 - 9$

25. What are the solutions to
    $x^2 + 4x + 13 = 0$?

    A $-2 \pm 3i$ C $-2 \pm 6i$

    B $-2 \pm \sqrt{17}$ D $-2 \pm \sqrt{17}i$

26. Marta is standing on the roof of her
    apartment building when she throws a
    ball upward over the edge. The ball is
    55 feet above the ground when she lets
    it go. The quadratic equation that models
    the path of the ball is $p(t) = -16t^2 + 24t + 55$. How long does it take for the
    ball to hit the ground?

    F 1.25 seconds   H 2.75 seconds

    G 2.25 seconds   J 3.25 seconds

27. Simplify $\dfrac{2 - 4i}{1 - i}$.

    A $1 + 3i$ C $3 - i$

    B $2 + 4i$ D $4 - 2i$

28. Which is equal to $(2p + r)^4$?

    F $16p^4 + r^4$

    G $16p^4 + 8p^3r + 4p^2r^2 + 2pr^3 + r^4$

    H $16p^4 + 32p^3r + 16p^2r^2 + 4pr^3 + r^4$

    J $16p^4 + 32p^3r + 24p^2r^2 + 8pr^3 + r^4$

29. Which is NOT a factor of
    $(x^4 - 2x^3 - 7x^2 + 8x + 12)$?

    A $x - 1$ C $x - 2$

    B $x + 1$ D $x + 2$

30. If 4 and $\left(2 + \sqrt{5}\right)$ are two of the roots of
    a fourth-degree polynomial with integer
    coefficients, which of the following could
    be the set of all of the roots?

    F $\left\{2 - \sqrt{5}, 4, 2 + \sqrt{5}\right\}$

    G $\left\{2 - \sqrt{5}, \sqrt{5}, 4, 2 + \sqrt{5}\right\}$

    H $\left\{3, 4, 2 + \sqrt{5}, 7\right\}$

    J $\left\{2 - \sqrt{5}, 3 - \sqrt{2}, \sqrt{5}, 4, 3 + \sqrt{2}, 2 + \sqrt{5}\right\}$

31. Lists all the roots of $x^4 + x^2 = 2$.

    A $\{\pm 1, \pm i\}$

    B $\left\{\pm 1, \pm \sqrt{2}\right\}$

    C $\left\{\pm 1, \pm \sqrt{2}i\right\}$

    D $\left\{\pm 1, \sqrt{2} \pm i\right\}$

Worksheet Q4-8 Tuesday cont. SKIP 35 AND 37 ☺

32. If $A(x)$ and $B(x)$ are both quadratic functions with negative leading coefficients, and $C(x)$ is the product of $A(x)$ and $B(x)$, which of the following could be the graph of $C(x)$?

F

G

H

J
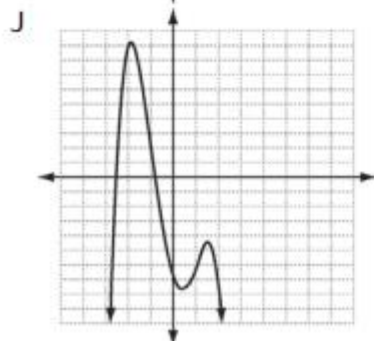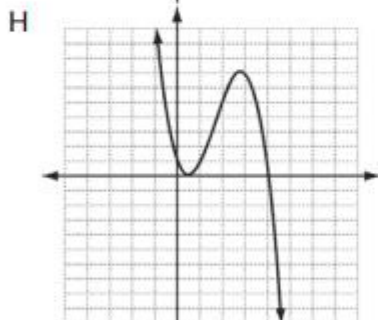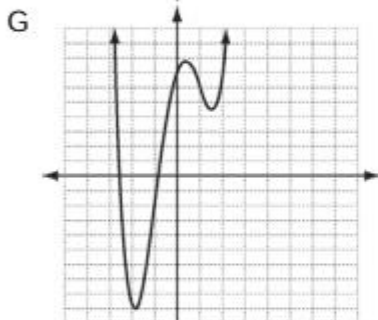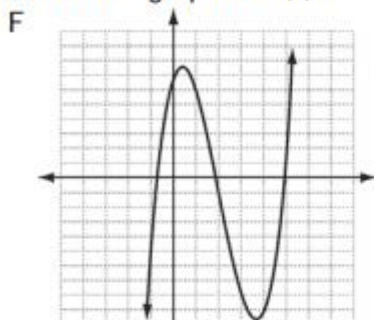
33. If $f(x) = -x^3 + 2x^2 - 3x + 4$, and $g(x)$ is a translation of $f(x)$ two units to the right, which of the following is equal to $g(x)$?

A $-x^3 - 4x^2 - 23x + 26$

B $-x^3 - 4x^2 - 7x - 2$

C $-x^3 + 8x^2 - 23x + 26$

D $-x^3 + 8x^2 - 7x - 2$

34. The city of Easton had a population of 45,000 in 1997 and then began to decrease in population at a rate of 1.5% per year. Which function expresses the population of Easton in the year t?

F $P(t) = 45,000(.015)^t$

G $P(t) = 45,000(.015)^{t-1997}$

H $P(t) = 45,000(.985)^t$

J $P(t) = 45,000(.985)^{t-1997}$

35. Which of the following is the inverse of $f(x) = 3(5^x)$?

A $f^{-1}(x) = \log_5 \dfrac{x}{3}$

B $f^{-1}(x) = \dfrac{\log_5 x}{3}$

C $f^{-1}(x) = 3\log_5 x$

D $f^{-1}(x) = \log_{15} x$

36. Evaluate $\log_8 0.25$.

F $-\dfrac{2}{3}$ H $\dfrac{1}{32}$

G $-\dfrac{1}{32}$ J $\dfrac{2}{3}$

37. Simplify $\log_4 3 + \log_4 12$.

A $\dfrac{2\ln 6}{\ln 4}$ C $\log 36$

B $\log_4 15$ D $\log_3 12$