Student: Cole Lamers **Date:** 06/09/19	**Instructor:** Kelly Galarneau **Course:** CA&T Internet (70263) Galarneau	**Assignment:** 1.4 Solving other Types of Equations

1. Watch the video and then solve the problem given below.

   Click here to watch the video.[1]

   Solve $x^3 - 7x^2 = 28 - 4x$.

   Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

   ☑ **A.** The solution set is $\{\ \ -2i, 2i, 7\ \ \}$.
   (Simplify your answer. Type an exact answer, using radicals and i as needed. Use a comma to separate answers as needed.)

   ○ **B.** The solution set is the set of all real numbers.

   ○ **C.** The solution set is the empty set.

   1: http://mediaplayer.pearsoncmg.com/assets/KGpY9KBBQEkqKpuYOE_L6c210FTMynYU

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2. Use factoring to solve the polynomial equation. Check by substitution or by using a graphing utility and identifying x-intercepts.

   $$3x^4 - 27x^2 = 0$$

   The solution set is $\{\ \ 3, -3, 0\ \ \}$.
   (Use a comma to separate answers as needed.)

3. Find the real solutions of the equation by factoring.

   $$7x^3 + x = 0$$

   Select the correct choice below and, if necessary, fill in the answer box to complete your answer.

   ☑ **A.** The solution set is $\{\ \ 0\ \ \}$.
   (Use a comma to separate answers as needed. Type an integer or a fraction.)

   ○ **B.** The solution is not a real number.

4. Find the real solutions of each equation by factoring.

   $$x^4 - 5x^3 = 25x^2 - 125x$$

   Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

   ☑ **A.** The solution set is $\{\ \ 5, -5, 0\ \ \}$.
   (Simplify your answer. Use a comma to separate answers as needed.)

   ○ **B.** There is no solution.

5. Watch the video and then solve the problem given below.

Click here to watch the video.[2]

Solve $\dfrac{4}{x+3} + \dfrac{x}{x-3} = \dfrac{5x+3}{x^2-9}$.

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

✔ **A.** The solution set is $\{$ -5 $\}$.
(Simplify your answer. Type an exact answer, using radicals and i as needed. Use a comma to separate answers as needed.)

○ **B.** The solution set is the set of all real numbers.

○ **C.** The solution set is the empty set.

2: http://mediaplayer.pearsoncmg.com/assets/DBmB01Z3dp1qHf5msyMlyw7vFS_kfQPA

6. Solve the equation.

$\dfrac{x}{x-7} - \dfrac{7}{x+7} = \dfrac{14x}{x^2-49}$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

○ **A.** The solution set is $\{$ $\}$.
(Simplify your answer. Use a comma to separate answers as needed.)

✔ **B.** There is no solution.

7. Solve the equation. Check your answers.

$\dfrac{1}{x-1} + \dfrac{x}{x+2} = \dfrac{3}{x^2+1x-2}$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

✔ **A.** The solution set is $\{$ -1 $\}$.
(Simplify your answer. Use a comma to separate answers as needed.)

○ **B.** There is no solution.

8. Solve the radical equation.

$\sqrt[3]{2x+50} = 4$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

✔ **A.** The solution set is $\{$ 7 $\}$.
(Type an exact answer, using radicals as needed. Use a comma to separate answers as needed.)

○ **B.** The solution is the empty set.

9.   Solve.

$$\sqrt{x + 3} = -1$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

○ **A.**   The solution is { _____ }.
       (Use a comma to separate answers as needed.)

✔ **B.**   There is no solution.

10.   Solve the equation.

$$x + \sqrt{2x + 15} = 0$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

✔ **A.**   The solution set is { -3 }.
       (Type an exact answer, using radicals as needed. Use a comma to separate answers as needed.)

○ **B.**   The solution is the empty set.

11.   Solve the radical equation.

$$x = \sqrt{3x + 28}$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

✔ **A.**   The solution set is { 7 }.
       (Type an exact answer, using radicals as needed. Use a comma to separate answers as needed.)

○ **B.**   The solution is the empty set.

12.   Solve.

$$\sqrt{5x + 29} = x + 3$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

✔ **A.**   The solution set is { 4 }.
       (Simplify your answer. Use a comma to separate answers as needed.)

○ **B.**   The solution is not a real number.

13. Watch the video and then solve the problem given below.

    Click here to watch the video.[3]

    Solve $\sqrt{3x+1} - \sqrt{x-1} = 2$.

    Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

    A. The solution set is $\{$ 1,5 $\}$.
       (Simplify your answer. Type an exact answer, using radicals and i as needed. Use a comma to separate answers as needed.)

    B. The solution set is the set of all real numbers.

    C. The solution set is the empty set.

    3: http://mediaplayer.pearsoncmg.com/assets/dIlPvSPaz5DBwxcPJ9eAfB0tgcRkCRPd

14. Watch the video and then solve the problem given below.

    Click here to watch the video.[4]

    Solve $x^6 - 7x^3 - 8 = 0$.

    Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

    A. The solution set is $\{$ $-1,2$ $\}$.
       (Simplify your answer. Type an exact answer, using radicals and i as needed. Use a comma to separate answers as needed.)

    B. The solution set is the set of all real numbers.

    C. The solution set is the empty set.

    4: http://mediaplayer.pearsoncmg.com/assets/V0aDPnKwL_fw7suC579LJOn8Zgopqq_f

15. Solve the following equation by making an appropriate substitution.

    $$x^{-2} - 3x^{-1} - 18 = 0$$

    The solution set is $\left\{ \dfrac{1}{6}, -\dfrac{1}{3} \right\}$. (Use a comma to separate answers as needed.)

16. Solve.

    $$x^{2/3} - 2x^{1/3} - 3 = 0$$

    Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

    A. The solution is $\{$ $27, -1$ $\}$.
       (Use a comma to separate answers as needed.)

    B. There is no solution.

17. Solve.

    $x^4 - 82x^2 + 81 = 0$

    Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

    ✅ **A.** The solution is $\{ \ 9, 1, -9, -1 \ \}$.
       (Use a comma to separate answers as needed.)

    ⚪ **B.** There is no solution.

18. Solve.

    $(5x - 4)^2 + 6(5x - 4) - 112 = 0$

    Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

    ✅ **A.**
       The solution set is $\left\{ \ -2, \dfrac{12}{5} \ \right\}$.
       (Use a comma to separate answers as needed. Type an integer or a simplified fraction.)

    ⚪ **B.** There is no solution.

19. A motorboat is capable of traveling at a speed of 14 miles per hour in still water. On a particular day, it took 10 minutes longer to travel a distance of 8 miles upstream than it took to travel the same distance downstream. What was the rate of current in the stream on that day?

    The rate of current was $\boxed{2}$ mph on that day.

20. A father and his son can clean the house together in 7 hours. When the son works alone, it takes him an hour longer to clean than it takes his dad alone. Find how long it takes the son to clean alone.

    It takes the son $\boxed{14.5}$ hours to clean alone. (Round to the nearest tenth.)