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Course: CA&T Internet (70263) Galarneau
Assignment: Practice Quiz 1 (Chapter 1)

1. Solve the following equation.

$7(4 - y) + 8y = 2y$

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

- **A.** The solution set is $\{ 28 \}$.
  (Type an integer or a simplified fraction.)
- **B.** The solution is all real numbers.
- **C.** There is no solution.

2. Solve the following equation.

$4[x + 4(3 - x)] = 3x + 1$

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

- **A.** The solution set is $\left\{ \frac{47}{15} \right\}$.
  (Type an integer or an improper fraction.)
- **B.** The solution is all real numbers.
- **C.** There is no solution.

3. Solve for p and check.

$-12p - 4(6 - 5p) = 6(p - 2) - 16$

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

- **A.** There is no solution.
- **B.** The solution is all real numbers.
- **C.** The solution set is $p = \{ -2 \}$.

4. Solve the formula for h.

$A = \frac{(j + k)h}{2}$

$h = \frac{2A}{j + k}$

(Simplify your answer.)

5. Solve the formula for z.

$\frac{1}{p} + \frac{1}{k} = \frac{1}{z}$

$z = \frac{pk}{k + p}$

6. Factor the greatest common factor from the polynomial.

$21x^2 + 14x$

Select the correct choice below and fill in any answer boxes within your choice.

- **A.** $21x^2 + 14x =$ $7x(3x + 2)$
- **B.** The polynomial cannot be factored.

7. Factor the difference of two squares.

$x^2 - 4$

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

8. Factor the perfect square trinomial, or state that the polynomial is prime.

$x^2 + 30x + 225$

Select the correct choice below and fill in any answer boxes within your choice.

- **A.** $x^2 + 30x + 225 =$ $(x + 15)(x + 15)$
- **B.** The polynomial is prime.

9. Factor the given trinomial.

$x^2 + 11x + 28$

Select the correct choice below and fill in any answer boxes within your choice.

- **A.** $x^2 + 11x + 28 =$ $(x + 7)(x + 4)$
- **B.** The trinomial is prime.

10. Solve the equation.

$x^2 = 7x + 30$

The solution set is $\{$ $10, -3$ $\}$.
(Simplify your answer. Use a comma to separate answers as needed.)

YOU ANSWERED: $(x - 10)(x + 3)$

11. Solve.

$x^2 + 3 = 172$

The solution set is $\{$ $13, -13$ $\}$.
(Simplify your answer. Use a comma to separate answers as needed.)

YOU ANSWERED: 13

12. Solve.

$(x-4)^2 = 9$

YOU ANSWERED: 7

The solution set is $\{ 7,1 \}$.
(Simplify your answer. Use a comma to separate answers as needed.)

13. Subtract and simplify.

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

$(6-i)-(8+7i) =$ $-2-8i$
(Simplify your answer. Type your answer in the form a + b i .)

14. Find the conjugate $\bar{z}$ of the complex number z. Then find $z\bar{z}$.

$z = 5+2i$

What is the complex conjugate?

$\bar{z} =$ $5-2i$
(Simplify your answer. Express complex numbers in terms of i.)

What is the product?

$z\bar{z} =$ 29
(Simplify your answer. Express complex numbers in terms of i.)

15. Write the conjugate $\bar{z}$ of the complex number z. Then find $z\bar{z}$.

$z = \sqrt{3} - 4i$

What is the complex conjugate?

$\bar{z} =$ $\sqrt{3}+4i$
(Type an exact answer, using radicals as needed. Express complex numbers in terms of i.)

What is the product?

$z\bar{z} =$ 19
(Simplify your answer.)

16. Solve for x using the quadratic formula.

$x^2 - 2x + 10 = 0$

The solution set is $\{ 1+3i\sqrt{1}, 1-3i\sqrt{1} \}$.
(Type an exact answer, using radicals as needed. Express complex numbers in terms of i . Use a comma to separate answers as needed.)

17. Find the power of i and simplify the expression.

i^{-55}

$i^{-55} =$ i
(Simplify your answer. Type your answer in the form a + bi.)

18. Find the power of i and simplify the expression.

$i^{18}+5$

$i^{18}+5=$ 4

(Simplify your answer.)

19. Find each power of i and simplify the expression.

$4i^{9}\left(2+i^{4}\right)$

$4i^{9}\left(2+i^{4}\right)=$ $12i$

YOU ANSWERED: 60

20. Solve the equation. Check your answers.

$$\frac{1}{x-1}+\frac{x}{x+5}=\frac{6}{x^2+4x-5}$$

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.

21. Solve the radical equation.

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

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.

22. Solve.

$\sqrt{x+3}=-8$

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.

23. Solve the radical equation.

$x = \sqrt{4x + 5}$

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

- **A.** The solution set is $\{ \quad 5 \quad \}$.
  (Type an exact answer, using radicals as needed. Use a comma to separate answers as needed.)
- **B.** The solution is the empty set.

24. Solve the inequality. Write the solution set in interval notation and graph the solution set.

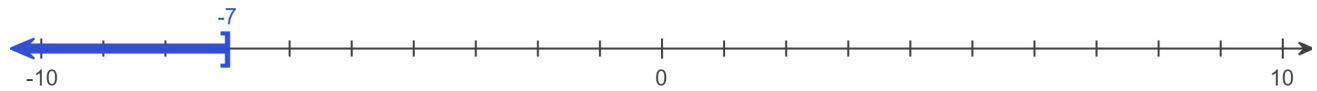
$1 - x \leq 8$

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

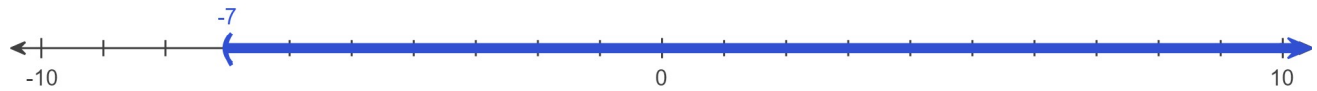
- **A.** The solution set is $[-7, \infty)$.
  (Simplify your answer. Type your answer in interval notation.)
- **B.** The solution is the empty set.

Choose the correct graph of the solution set below.

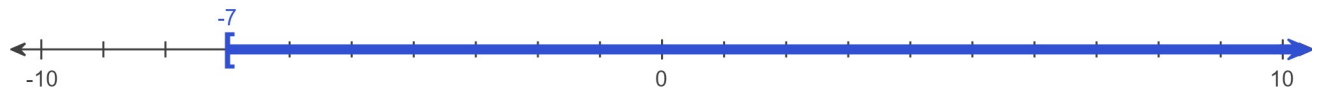
- **A.**



- **C.**



- **E.**



25. Solve and graph.

$2x + 2 < 4$

What is the solution?

- **A.** $(-\infty, 1)$
- **B.** $(-1, 1)$
- **C.** $(-\infty, 1]$
- **D.** $(-1, \infty)$

Choose the correct graph.

- **A.**

- **B.**

- **C.**

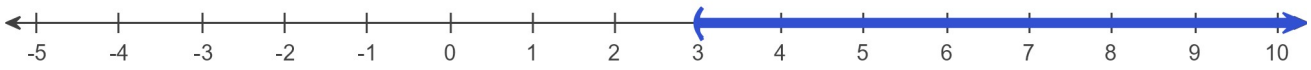
26. Solve the inequality. Write the solution set in interval notation, and graph it.

$-15z + 36 > -9$

The solution set in interval form is $(-\infty, 3)$.

Choose the graph that best represents the inequality.

A.



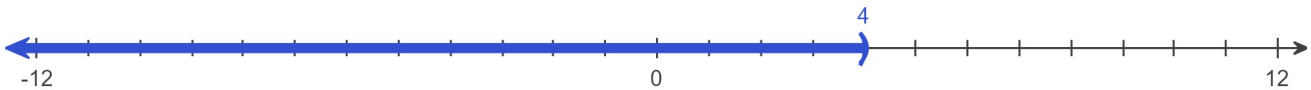
C.

27. Solve the inequality. Graph the solution set and write it in interval notation.

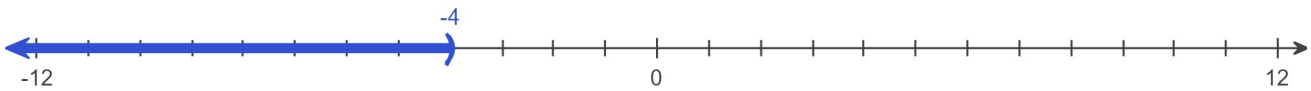
$2 + 4x < 3x + 6$

Select the correct graph below.

A.



C.



Now enter the solution in interval notation.

$(-\infty, 4)$

28. Solve the inequality. Write the solution in interval notation and graph the solution set.

$7(x+2) \le 5(x+1)+14$

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

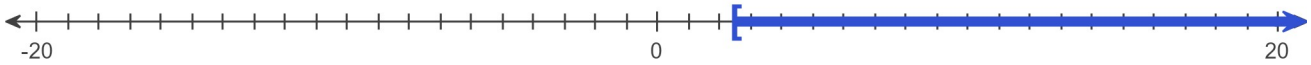
- **A.** The solution set is empty.
- **B.** The solution set is $\left(-\infty, \frac{5}{2}\right]$.

(Type your answer in interval notation. Type an integer or a simplified fraction.)

Choose the graph that looks like the graph for this solution set.

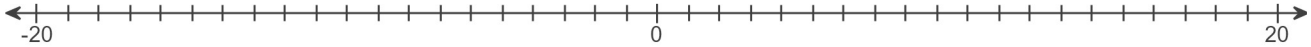
- **A.**

- **B.**



- **C.** ✔

- **D.**



YOU ANSWERED: B.: $\left[-\infty, \frac{5}{2}\right)$

29. Solve the rational inequality.

$9x - 8 \ge \frac{5}{2}x + 5$

What is the solution set?

$\{[2,\infty)\}$

(Type your answer in interval notation. Type an integer or a simplified fraction.)

30. Solve the rational inequality.

$\frac{x-1}{2} \ge \frac{x}{3} + 3$

What is the solution set?

$\{[21,\infty)\}$

(Type your answer in interval notation. Type an integer or a simplified fraction.)

31. Solve the compound *or* inequality.

$2x + 9 < 1$ or $4 + x > 7$

Choose the correct interval below.

- **A.** $(-\infty, -4) \cup (3, \infty)$
- **B.** $(-4, 3)$
- **C.** $(-\infty, -4) \cup (7, \infty)$
- **D.** $(-4, 7)$

32. Solve the compound *or* inequality.

$\frac{5x-3}{5} \leq 2$ or $\frac{15-7x}{5} \geq 3$

Choose the correct interval below.

- **A.** $(-\infty, 0) \cup \left[\frac{13}{5}, \infty\right)$
- **B.** $\left(-\infty, \frac{13}{5}\right]$
- **C.** $(0, 10]$
- **D.** $(-\infty, 0) \cup [10, \infty)$

YOU ANSWERED: A.

33. Solve the combined inequality.

$-5 < x + 2 < -3$

The interval is $(-7, -5)$. (Type your answer in interval notation.)

34. Solve the compound inequality.

$-6 \leq x - 5 < 5$

The solution is $[-1, 10)$. (Type your answer in interval notation.)

35. Use the test-point method to solve the polynomial inequality.

$(x + 3)(x + 1)(x - 1) \geq 0$

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

- **A.** The solution set is $[-3, -1] \cup [1, \infty)$.
  (Type your answer in interval notation.)
- **B.** The solution is $\varnothing$.

36. Use the test-point method to solve the polynomial inequality.

$x^3 - x^2 - 6x > 0$

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

- **A.** The solution set is $(-2,0) \cup (3,\infty)$.
  (Type your answer in interval notation. Use integers or fractions for any numbers in the expression.)
- **B.** The solution is $\varnothing$.

YOU ANSWERED: A.: $(-\infty,0)$

37. Find the solution set for the equation.

$|x - 1| = 7$

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

- **A.** The solution set is $\{8, -6\}$.
  (Simplify your answer. Use a comma to separate answers as needed.)
- **B.** There is no solution.

38. Solve.

$|4x - 1| = 4$

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

- **A.** The solution set is $\left\{\frac{5}{4}, -\frac{3}{4}\right\}$.
  (Type an integer or a simplified fraction. Use a comm
- **B.** The solution set is the empty set.

39. Solve the inequality.

$|8x - 7| < 8$

The solution in interval notation is $\left(-\frac{1}{8}, \frac{15}{8}\right)$.

(Type your answer in interval notation. Simplify your answer. Use integers or fractions for any numbers in the expression.)

YOU ANSWERED: $\left(\frac{15}{8}, \frac{1}{8}\right)$

40. Solve the inequality.

$|2 - 3x| > 4$

What is the solution set?

$\left(-\infty, -\frac{2}{3}\right) \cup (2,\infty)$

(Type your answer in interval notation. Type integers or simplified fractions.)