

**Show your work**

Box Your Answers

Calculators Allowed

Simplify All Fractions

Evaluate (find the numerical answer by following the order of operations)

1)  $18 - 6 + 60 \div 3 \cdot 2^2$

2)  $-x^3 - x^2 - x - 4$  if  $x = -4$

3)  $-2x^2 + 6x - 3$  if  $x = -6$

4)  $\frac{2}{3} + \frac{1}{2} - 3\frac{1}{4}$  (give solution as a simplified fraction)

5)  $-\frac{6}{5} \div 2\frac{2}{3}$  (give solution as a simplified fraction)

6)  $3 - \frac{11}{3}$  (give solution as a simplified fraction)

Simplify the following expressions (use the order of operations and the distributive property to eliminate fractions and combine all like terms).

7)  $3x - 2(x + 4)$

8)  $6x^2 - 12x + 4x^2 - (3x - 1)$

9)  $2(x + 3)^2 + 4x - 3$  [note:  $(x + 3)^2 \neq x^2 + 9$ ]

10)  $(6x - 2)(3x + 4)$

Solve (find the value of  $x$  to make the initial equation a true statement). Check your solutions (this is required)

11)  $3x - 6 = 12$

12)  $\frac{2}{3}x - 4 = 2$

13)  $\frac{2x-4}{3} = 2$

14)  $3x - 2(x + 4) = 6x - 9$

15)  $\frac{3}{4} + \frac{2}{3}x = \frac{1}{2} - \frac{x}{5}$  (do you remember how to clear fractions?)

16)  $\frac{3}{5} = \frac{x}{7}$  (hint: this is a proportion)

17)  $\frac{x+3}{x} = \frac{2}{5}$

18)  $\frac{4}{5}x - 7 = \frac{3}{4}x + 10$

19)  $\frac{x}{4} + 3 = 2 + \frac{x}{3}$

**SUMMER HW#1 (continued)****Due Wednesday, August 22<sup>nd</sup>****Graded based on correctness**

Solve and graph the following inequalities. Remember! When you multiply or divide both sides of an inequality by a *negative* number, the inequality switches direction (the arrow flips). Check your solutions.

20)  $x + 3 < 2x - 5$

21)  $4 - (2x + 5) > 3x + 1$

22)  $\frac{2}{3}x \leq -12$  or  $x - 5 > 9$



23)  $-33 \leq -7x - 12 < -26$

24)  $-4x + 5 < 10x - 23$  and  $-2x + 11 > 22$

25)  $x + 1 \leq -3$  or  $-4n < -8$



Evaluate the absolute value expressions. (Find a single numerical result)

23)  $|6 - 2(4)|$

24)  $6 + 2|-4 - 2a^2|$  if  $a = -10$

Solve the absolute value equations. (Remember there's potentially 0, 1 or 2 solutions).

25)  $|x + 7| = 10$

26)  $10 - 3|x - 5| = 12$