Instructions: Record your answers to each of these problems directly on this page. Do the work on a separate page and attach these pages to this one. You should do the work by hand, but you may check your work with a calculator.

1. Solve for x in $x + 28 = 54$ $X = 26$

2. Solve for x in $7x = 56$ $X = 8$

3. Solve for the variable in each equation
   a. $7 + t = -18$ $t = -25$
   b. $7x - 3 = 25$ $X = 4$
   c. $-x - 6 = -8$ $X = 2$
   d. $2x - 4 + 3x + 5 = (2 + 3)x + (-4 + 5)$ $5X + 1 = 5X + 1 \Rightarrow$ identity all values of x

4. Solve the equation, round to the nearest tenth. $9(x - 4) + 13 = 4x + 12$
   $9x - 36 + 13 = 4x + 12 \rightarrow 5x - 23 = 12$
   $5X = 35$
   $X = 7$

5. Find the mean of: $72, 83, 85, 88, 92$
   84

6. Solve for the variable in the following equations.
   a) $12 = 8 + \dfrac{7}{2}t$ $t = 8/7$
   b) $9 = a + \dfrac{47}{10}$ $a = 43/10$
   c) $\dfrac{11}{5}t + \dfrac{36}{5} = \dfrac{7}{2}$ $t = \dfrac{37}{22}$

7. Convert the following temperatures. $C = \dfrac{5}{9}(F - 32)$ $\dfrac{9}{5}C + 32 = F$
   a. 3°C is how many degrees Fahrenheit? $37.4° F$
   b. -5°C is how many degrees Fahrenheit? $23° F$
   c. 98.6°F is how many degrees Celsius? $37° C$
   d. -10°F is how many degrees Celsius? $-23.\overline{3}° C$
   e. What is room temperature in Celsius? $21° \text{ or } 22° C$
   f. At what temperature are the Fahrenheit and Celsius scales the same? $-40°$

8. Le Grand Chocolate Shop is preparing Valentine boxes. How many pounds of truffles will be needed to fill 75 boxes if each box contains $\dfrac{2}{5}$ lbs.? 30 lbs

9. A package of coffee beans weighed $\dfrac{21}{32}$ lbs. when it was ¾ full. How much could the package hold when it was completely full? $7/8 \text{ lbs}.$

10. Use a number line to explain why the result of subtracting 3 – (–4) is the same as the result of adding 3 + 4?
    Subtraction is to move left on the # line but a negative # is the opposite. so move 4 units right

11. Explain how the solution methods for $-2q = 34$ and $q - 2 = 34$ are different.
    in the first -2 is multiplying q, so to undo multiplication you divide. in the second -2 is added (or subtracting 2) from q. so we do the opposite operation which is subtraction/addition to undo it

12. Simplify. $\dfrac{\frac{3}{4}-\frac{3}{5}}{\frac{1}{4}+\frac{2}{5}}$ $\dfrac{3}{13}$

13. Evaluate $4p^2q$ when $p=-\frac{1}{2}$ and $q=\frac{5}{9}$ $4\left(-\frac{1}{2}\right)^2\left(\frac{5}{9}\right)=\frac{5}{9}$

14. Solve $-\frac{2}{5}=x+\frac{3}{4}$ $X=\dfrac{-23}{20}$

15. Solve $-4.2a=3.36$ $a=-0.8$

16. Find the simple interest earned after 4 years on \$900 at an interest rate of 6%. $\$216$

17. Find the principal invested if \$10,953.70 interest was earned in 5 years at an interest rate of 11.04%. $\$19,843.66$

18. Josiah went to Mexico for spring break and changed \$325 dollars into Mexican pesos. At that time, the exchange rate had \$1 U.S. is equal to 12.54 Mexican pesos. How many Mexican pesos did he get for his trip? 4075.5

19. Oxana bought a dresser at a garage sale for \$20. She refinished it, then added a 250% markup before advertising it for sale. What price did she ask for the dresser? $\$70$

20. Graph the following inequalities on a number line.
    a. $x\le 10$
    b. $-5<x<20$
    c. $x<0$ or $x\ge -1$
    d. $x>-5$
    e. $0\le x<15$
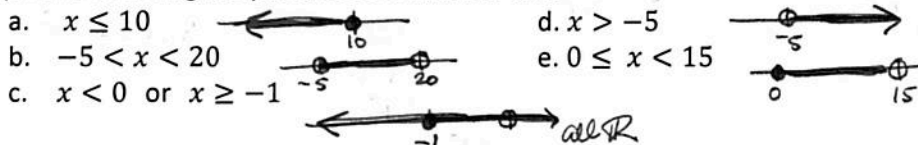
21. Solve the inequalities and draw the solution on a number line. $x>\frac{4}{23}$
    a. $-15x+34<15$ $x>-\frac{19}{15}$
    b. $2(-3x+1)<14$ $x>-2$
    c. $-22<5x+3\le 3$
    d. $-23x+1<-3$
    e. $-7(x-2)+1<15$
    f. $-32\le 14(12x-1)+34<32$

a. $-\frac{19}{15}$

d. $\frac{4}{23}$

b. $-6x+2<14$
    $x>-2$
    -2

e. $-7x+14+1<15$
    $-7x<0$
    $x>0$
    0

c. $-25<5x\le 0$
    $-5<x\le 0$
    -5 0

f. $-32\le 168x-14+34<32$
    $-52\le 168x<12$
    $-\frac{13}{42}\le x<\frac{1}{14}$
    $-\frac{13}{42}$ $\frac{1}{14}$