Name Key

Period

Real-World Algebra Assignment #2

1. Sierra Custom Plumbing charges $70 for a service call, plus an hourly rate of $20.

a. What would Sierra Custom Plumbing charge for a job that takes three and one-half hours?

$70 + 3.5(20) = \boxed{\$140}$

b. Write an **algebraic expression** for the cost of a plumbing job that takes *h* hours.

$\boxed{70 + 20h}$

c. Write an **equation** for a plumbing job that takes *h* hours and costs $425, then solve for the number of hours worked.

$425 = 70 + 20h$

$\boxed{h = 17.75}$

d. You have a **major** plumbing problem in your house. You look in your checking account and find that you only have $581. Write an **equation**, then solve for the number of hours you could have the plumber work.

$581 \geq 70 + 20h$

$25.55 \geq h$

$\boxed{25 \text{ hours}}$

2. ATT charges $7.43 for the monthly fee plus 7 cents per minute. (reminder, 7 cents = $0.07)

a. What would be the phone bill be if you called 100 minutes?

$7.43 + 0.07(100)$

$\boxed{\$14.43}$

b. What would be the phone bill be if you called 263 minutes?

$7.43 + 0.07(263)$

$\boxed{\$25.84}$

c. Write an algebraic expression for the cost of *m* minutes of calls?

$\boxed{7.43 + 0.07m}$

d. Write an **equation** for a month with *m* minutes of phone calls that costs $36, then solve for the number of minutes called.

$36 = 7.43 + 0.07m$

$\boxed{408 \text{ minutes}}$

Solve for the variable

3. $3n+2=-1$

$+-2 \quad +-2$

$(\frac{1}{3})3n = -3(\frac{1}{3})$

$\boxed{n=-1}$

4. $8y+10=2$

$+10 \quad +10$

$(\frac{1}{8})8y = 12(\frac{1}{8})$

$y = \frac{12}{8} = \boxed{\frac{3}{2}}$

5. $4(3+5w)=-11$

$12+20w=-11$

$+-12 \quad +-12$

$(\frac{1}{20})20w = -23(\frac{1}{20})$

$\boxed{w=\frac{-23}{20}}$

6. $-7(h+2)=12$

$-7h-14=12$

$+14 \quad +14$

$(-\frac{1}{7})-7h = 26(-\frac{1}{7})$

$\boxed{h=\frac{-26}{7}}$

7. $7=x+4(2+x)$

$7=x+8+4x$

$7=5x+8$

$+-8 \quad +-8$

$(\frac{1}{5})15 = 5x(\frac{1}{5})$

$\boxed{x=3}$

8. $20+3(x+5)=3$

$20+3x+15=3$

$3x+35=3$

$+-35 \quad +-35$

$(\frac{1}{3})3x = -32(\frac{1}{3})$

$\boxed{x=\frac{-32}{3}}$

9. $120+-8(4+9x)=7$

$120+-32+-72x=7$

$-72x+88=7$

$+-88 \quad +-88$

$(\frac{-1}{72})-72x = -81(\frac{-1}{72})$

$x = \frac{81}{72} = \boxed{\frac{9}{8}}$

10. $\frac{2}{3}n+16=2$

$+-16 \quad +-16$

$(\frac{3}{2})\frac{2}{3}n = -14(\frac{3}{2})$

$n = \frac{-42}{2} = \boxed{-21}$