Show your work for full marks! Remember that you can check all of your answers! You may use any method that you wish.

/35

1) For the following two-step equations, complete the table **fully**. ➄ each.

|  |  |
| --- | --- |
| Equation: | $$6x+2=3x+62$$ |
| Collect the variable terms: |
| Collect the constant terms: |
| Divide: |
| Am I Right? |

b)

|  |  |
| --- | --- |
| Equation: | $12.5x+2=7.5x+12$  |
| Collect the variable terms: |
| Collect the constant terms: |
| Divide: |
| Am I Right? |

c)

|  |  |
| --- | --- |
| Equation: | $$11+31x=28x+14$$ |
| Collect the variable terms: |
| Collect the constant terms: |
| Divide: |
| Am I Right? |

d)

|  |  |
| --- | --- |
| Equation: | $$7x-2=10x+1$$ |
| Collect the variable terms: |
| Collect the constant terms: |
| Divide: |
| Am I Right? |

2) Solve any six of the following equations. You can rearrange first if you’d like. You do not need to show Mr. Smith a check to your answer. You can use any method that you prefer. ➂ each

a) $4x+5=7x+11$ b) $3x+7=5x-17$ c) $6x-7=5x+5$

d) $-2x+7=3x+22$ e) $1.5x-5.2=0.9x+0.2$ f) $-4+5x=2x+8$

g) $-3x+9=-6x+21$ h) $3.5x-5.4=2.8x+0.2$ i) $-4-5x=-2x-7$

3) Mr. Smith and his clan mate are doing some raiding for dark elixir (so they can upgrade their heros). They each started with a certain amount of dark elixir, and they each steal a certain amount of dark elixir each hour:

Mr. Smith: Starts with 10,000 dark elixir and makes 4,500 dark elixir every hour.

His Friend: Starts with 25,000 dark elixir and makes 2,000 dark elixir every hour.

Here is an equation that models Mr. Smith’s dark elixir: $D=10000+4500n$

a) Can you make an equation that models his friend’s dark elixir? $D=\\_\\_\\_\\_\\_\\_+\\_\\_\\_\\_\\_\\_n$

b) How much dark elixir does each person have after 4.5 hours of raiding?

Mr. Smith: Friend:

Another friend of Mr. Smith’s has 40,000 to start with, and steals 3,000 every hour.

c) Solve the following equation: $40,000+3,000n=10,000+4,500n$

d) How many hours will it take until they have the same amount of dark elixir?