|  |
| --- |
| **WARM UP:** Each bag contains the **same number** of gold coins. **Determine** how many coins are in each bag.  |

**SOLVING THE UNKNOWN ALGEBRAICALLY**

**Determine** how many coins are in the bag.

Let ‘x’ represent **each bag** and each coin will have a value of **one**.





**GOLDEN RULE OF ALGEBRA**

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**SOLVING ONE-STEP EQUATIONS**

JUST perform the \_\_\_\_\_\_\_\_\_\_

(\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_) operation.

**Solve** each of the following equations:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Addition** | **Subtraction** | **Multiplication** | **Division** | **Square** |
| $$x+5=9$$ | $$x-1=3$$ | $$2x=10$$ | $$ \frac{x}{2}=6$$ | $$x^{2}=9$$ |
| $$x+10=31$$ | $$x-8=2$$ | $$5x=40$$ | $$\frac{x}{3}=-2$$ | $$x^{2}=36$$ |

**SOLVING TWO-STEP EQUATIONS**

Use Reverse Order of Operations

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

***Solve*** *the following equations****:***

|  |  |
| --- | --- |
| **1) Teacher**  | **Your Turn** |
| $$ 2x+8=20$$ | a) $3x-10=11$ | b) $25= 5+5x$ |
| **2) Teacher**  | **Your Turn** |
|  $5-x=11$ | a) $ 10-x=22$ | b) $ -22=–x-11$ |
| **3) Teacher**  | **Your Turn** |
| $$ 7-3x=19$$ | a) $-2x-8=10$ | b) 1$31=11-5x$ |
| **4) Teacher**  | **Your Turn** |
| $$ \frac{x}{3}-2=-4$$ | a) $9+\frac{x}{5}=11$ | b) 1$10=2-\frac{x}{2}$ |
| **5) Teacher**  | **Your Turn** |
| $$ x^{2}-5=44$$ | a) $12+x^{2}=21$ | b) $165=-4+x^{2}$ |
| **6) Teacher**  | **Your Turn** |
| $$ 2x^{2}-5=13$$ | a) $4x^{2}-10=26$ | b) $-306=-6-3x^{2}$ |

**PRACTICE**

1. Mr. Forster solved the following equation. Explain, using full sentences, what he did to get each line of his solution.

|  |  |
| --- | --- |
| **Mr. Forster’s Work** | **What He Did** |
| $$15-5x=10$$ | *Original Question* |
| $$-5x=-5$$ |  |
| $$x=1$$ |  |

2. Make up an equation with two operations that has a solution of x = 5.

3. Mike is currently 8 years older than Janet. Mike’s age can be calculated by using the equation below where m represents Mike’s age. Calculate their ages.

$$2m-8=30$$

**THINKING**

4. A triangle has a perimeter of 240 cm. The three side lengths are x, 2x + 40 and x + 60. What are the side lengths of this triangle?