For the following problems, write an equation and then SOLVE. Make sure to label the unknown variable.

1. Dustin opens a savings account with $350. He saves $150 per month. Assume that he does not withdraw money or make any additional deposits. After how many months will Dustin have $2,000?

Unknown: X Months

350 + 150X

Equation: 2000 = 150X + 350

Solution: X=11

2. A cell phone plan costs $30 per month for unlimited calling plus $0.15 per text message. If Shayna spent $64.05 this month, how many text messages did she send?

Unknown: X text message * in one month

Equation: 64.05 = 0.15X + 30

Solution: X=227

3. The sum of two consecutive integers is 27. Find the two integers.

Unknown: X first #

X + X+1 = 27

Equation: 2X+1=27

Solution: X=13, 14

4. The sum of three consecutive integers is 87. Find the three integers.

Unknown: X first #

X + X+1 + X+2 = 87

Equation: 3X+3=87

Solution: X=28

5. Savannah has a sweet tooth and ate x cookies last week. Her brother Seth has an even sweeter tooth and ate three times as many as she did. If together they ate 28 cookies, how many did Savannah eat?

Unknown: X # of cookies Savannah ate

Equation: 4X=28

X + 3X = 28

Solution: X=7

bought 4 pork chops for dinner which were on sale for 20% off. If he spent $13.76, how h did each individual pork chop cost before the discount?

Unknown: X $ of pork chop

Equation: 4X - 4X(.20) = 13.76

Solution: $17.20

4x - 4x(.20) = 13.76

*plug into 4x

X=4.3

7. There are three exams in a marking period. A student received a grade of 75 and 81 on the first two exams. What grade must the student earn on the last exam to get an average of 80 for the marking period?

Unknown: X third test

Equation: $\frac{156+x}{3} = 80$

Solution: 84

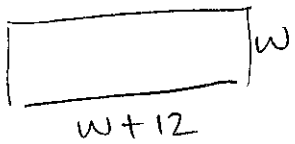
$\frac{75+81+x}{3} = 80$

8. A rectangle is 12m longer than it is wide. Its perimeter is 68m. Find its length and width.

Unknown: W → width

Equation: 4W + 24 = 68

Solution: W = 11



W = 11
L = 23

2(W+12) + 2W = 68
2W + 24 + 2W = 68

9. Alex has twice as much money as Jennifer. Jennifer has $6 less than Shannon. Together they have $54. How much money does each have?

Unknown: X - Shannon

Equation: 4X - 18 = 54

Solution: X = 18

Alex 2(X-6)
Jennifer X-6
Shannon X
} 54

2(X-6) + X-6 + X = 54
2X - 12 + X - 6 + X = 54

10. Meg received 90 votes for Student Council President, which were 50 less than twice the amount that Tom received. How many votes did Tom get?

Unknown: X Tom

Equation: 2X - 50 = 90

Solution: 70

Meg: 90

Tom: 2X - 50