

1. The sum of three times a number and 2 less than 4 times that same number is 15. Which of the following equations could be used to find the value of the number, n ? Explain how you arrived at your choice.

(1) $3n + 4n - 2 = 15$ (2) $3n + 4(n - 2) = 15$ (3) $4n + 3(n - 2) = 15$ (4) $3n - 4(n - 2) = 15$

2. Create a let statement for the following examples. Be sure to carefully read the question and figure out exactly what you are looking for. Then, set up an equation that summarizes the information in the problem and solve the equation and check for reasonableness.

*(a) The sum of 3 less than 5 times a number and the number increased by 9 is 24. What is the number?

(b) Tom is 4 more than twice Andrew's age. Sara is 8 less than 5 times Andrew's age. If Tom and Sara are twins, how old is Andrew?

*(c) A wireless phone plan costs Eric \$35 for a month of service during which he sent 450 text messages. If he was charged and fixed fee of \$12.50, how much did he pay per text?

(d) Daniel is currently 26 years older than his son. In six years he will be three times older than his son. How old are both of them now?

3. There is a competition at the local movie theater for free movie tickets. You must guess all four employees' ages given a few clues. The first clue is that when added together, their ages total 106 years. Kirk is twice ten years less than the manager's age, Brian is 12 years younger than twice the manager's age, and Matt is 6 years older than half the manager's age. What are all four of their ages? It may help to set up four let statements, one for each employee (including the manager).

R1. Simplify: $2x(x - 5) + 3(x - 5) + (x - 1)(x - 5)$

R2. Solve for k: $\frac{1}{4}(k - 1) = 7$

*R3. Erica is making feathered caps for her school play. Each cap must have 3 feathers. Which equation represents the number of feathers, f , Erica needs to make c caps?

(1) $c = 3f$

(2) $f = 3c$

(3) $c = f + 3$

(4) $f = c + 3$

*R4. Solve for y: $6(y - 2) = 8 - 2y$

R5. Simplify: $(x^2 - 3)^2$

1. (1)

2. (a) *Let $x =$ the number*

$$(5x-3)+(x+9)=24$$

$$x=3$$

(b) *Let $x =$ Andrew's Age*

$$2x+4=5x-8$$

$$x=4$$

(c) *Let $x =$ number of texts*

$$450x+12.50=35$$

$$x=.05$$

(d) *Let $x =$ the son's age*

Let $x+26 =$ Daniel's age

$$x+32=3(x+6)$$

Son is 7 , Daniel is 33

3. *Let $x =$ Manager's age*

Let $2(x-10) =$ Kirk's age

Let $2x-12 =$ Brian's age

Let $\frac{x}{2}+6 =$ Matt's age

$$x+(2(x-10))+(2x-12)+\left(\frac{x}{2}+6\right)=106$$

Manager is 24

Kirk is 28

Brian is 36

Matt is 18

R1. $3x^2-13x-10$

R2. $k=29$

R3. (2)

R4. $y=2.5$

R5. x^4-6x^2+9