

3.1 Equations

Equalities (=) $3x + 4 = 10$

- Both sides of the equation are equal
- There is one unique solution for x that would make the equation true.

Inequalities ($\geq \leq > <$) $2x - 4 \geq 8$

- Both sides are not equal
- You can still solve for x but it will have more than one solution

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Solving for X

**** every operation you do to one side of the equation, you must do to the other side as well, it is like keeping the scale balanced****



Ex 1: Level I

$$x - 5 = -6$$

Ex 2: Level II

$$3x + 3 = 9$$

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Ex 3: Level III

$$5x + 25 = -3x - 23$$

Note that we isolate our unknown cancelling the operations in the order of SAMDEB (backwards of BEDMAS)

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Ex 4: Level IV

$$6(x - 2) = -4(2x + 1)$$



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Ex 5: Level V

$$\frac{3x + 5}{4} = \frac{4x + 10}{2}$$

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Ex 6: (page 75 # 3(b))

$$-\frac{2}{3}x + \frac{1}{4} = \frac{3}{4}x + \frac{1}{2}$$



Trick:
Put all fractions over a common denominator;
now remove the denominator

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Practice:

Day 1: Page 75 # 1—6 (aceg in each)



Day 2: P.76 # (8—20 even); 25, 26

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More examples from page 76

#7) Nancy is 2 years older than her brother Eric. In 5 years, the sum of their ages will be equal to 40 years. What is the present age of each?

	Eric	Nancy
Now		
In 5 years		

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#17) Denise, Evelyn and Fran work at a convenience store. They earn an hourly rate of \$8. In one week, Denise worked 4 hours more than Evelyn whereas Fran worked 9 hours less than Denise. Together, they earned a total salary of \$856. What was Fran's salary that week?

Evelyn's hours:

Denise's hours:

Fran's hours:

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