Essential Skills Preview pg253 # 1 to 8

pg253 #6a

$x + 7 = -10$

$= \frac{-10}{7}$

$= -1.428571429x7$

$x = -10$

Check $x = -10$?

LS: $= (x) + 7$

$= (-10) + 7$

$= -3$

RS: $= -10$

$LS \neq RS$

$\therefore x = -10$ is false

Correction

6a) $x + 7 = -10$

Solve by inspection

Trial & Error

Guess & Check

Algebra

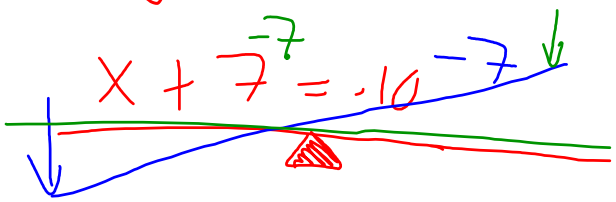
collecting like terms

$x + 7 = -10$

-7

$x = -10 - 7$

Why? "-7"



$x + 7 - 7 = -10 - 7$

cancels $-\emptyset$

$x = -10 - 7$

$x = -17$

Check $x = -17$

$$\frac{x + 7}{LS} = \frac{-10}{RS}$$

$LS = x + 7$

$= -17 + 7$

$= -10$

$RS = -10$

$LS = RS$ $\therefore x = -17$ is true!

4.1 Introduction to ALGEBRA; ADDING LIKE TERMS pg254

p.253 preview questions and skills

#7c) Solve for the remaining variable

Given data

$I = Prt$

$I = 19.20$

$P = 120$

$r = 8\% = 0.08$

Next Sub in Values for variables and simplify

$19.20 = 120(0.08)t$ (times)

$19.20 = 9.6t$

9.6 is t's coefficient

see next page

Now do the opposite

$19.20 \div 9.6 = t$

$t = 2$

$\therefore t = 2$

Why?

>>because on each side of the equal symbol you need to perform the same operation to keep the equation balanced, which means you haven't altered the equation,

>>>so what you do to one side you have to do the other side

>>>>>the reason why you divide 19.20 by 9.6 is because to isolate t you divide by 9.6, which means the coefficient for t is 1.

Ex. $\frac{8a^3}{2a}$ reduces to $= 4a^2$ $\qquad \frac{8a^3}{8a^2}$ reduces to $= a^1$

>>the reason why we chose to divide by 9.6 is because division is the opposite of multiplication and the equation starts with 9.6 times t.

>>>>and to isolate the unknown variable we need to perform the opposite operations that appear in the equation

$$19.20 = 120(0.08)t$$

first simplify

$$19.20 = 9.6t$$

then isolate

$$\frac{19.20}{9.6} = \frac{9.6t}{9.6}$$

these divide to 1 ∴

balanced!

$$2 = 1t$$

always conclude with the variable on the left

$\therefore t = 2$

true? $(X)+3=10$

what value makes "x" true?

if $x=7$

then

$LS=(7)+3=\boxed{10}$ $RS=10$

when $LS=RS$

the value $x=7$

makes the equation true.

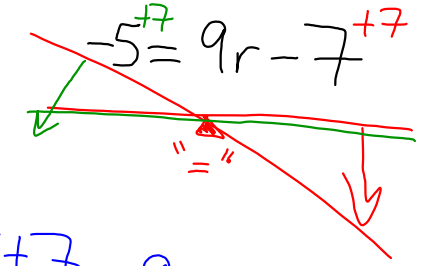
in other words,

$x=7$

satisfies the equation.

$LS=RS$

p253
#62)



$-5+7 = 9r - 7 + 7$

$2 = 9r + 0$ (cancelled)

$2 = 9r$

is "r" isolated? No!

Why? because the coefficient is 9 instead of 1.

$\frac{2}{9} = \frac{9r}{9}$ reduced

$\frac{2}{9} = 1r$

$\therefore r = \frac{2}{9} = 0.2222\ldots = 0.\overline{2}$

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#6d solution

$$-5 \equiv 9r - 7 \pmod{17}$$

$$\frac{2}{9} = \frac{9r}{9}$$

$$r = \frac{2}{9}$$

terms? = parts separated by adding, subtracting or any symbols.

Algebra Skills

$3x+2y-7+15$

$3x+2y-7+15$

4 terms

Which can we gather?

$3x+2y-7+15$

$3x+2y+8$

gather = simplify = collect

$-7+15$

add subtract

Can we add $3x+2y$? NO

because they are different Variables

instead call them

unlike terms.

We can collect

like terms.

↑ same variable and same exponents

or #s.

Ex. 1

$$3x + 7y - 2x - 4y$$

⇒ rearrange like terms

$$= 3x - 2x + 7y - 4y$$

now collect

$$= 1x + 3y$$

simplified because we are left with unlike terms.

① Make Blue Notes p. 256

4.1 Adding & Subtracting Simple Polynomials.

5th bullet!

② p. 257 #1-5.