

This book has permission to use the "N&K method of COLORS".

20) Question: $p = 3\sqrt{7}$, $5p = 3q$ and $q = \frac{r}{2}$,
 express "r" in terms of "p".

nw,nc.

For speed, while solving something similar, only THINK the words in blue; WRITE only the words in other COLORS.

- Given: 1) $p = 3\sqrt{7}$
 2) $5p = 3q$
 3) $q = \frac{r}{2}$

Solve: Express "r" in terms of real numbers.

Road Map of Solution:

First Step: Write down the given equations and assign each equation a number.

Second Step: Substitute the value of "q" from eq#3 in eq#2.

Third Step: Substitute the value of "p" from eq#1 in the result above.

First Step: Find Sale Price in terms of Original Price.

First Step: Write down the given equations and assign each equation a number.

p	$=$	$3\sqrt{7}$	equation #1
$5p$	$=$	$3q$	equation #2
q	$=$	$\frac{r}{2}$	equation #3

Second Step: Substitute the value of "q" from eq#3 in eq#2.

$$5p = 3q$$

$$5p = 3\left(\frac{r}{2}\right)$$

$$5p = \frac{3 \times r}{2}$$

$$5p \times \frac{2}{5} = \frac{3 \times r}{2} \times \frac{2}{5}$$

$$p \times \frac{5 \times 2}{3} = \frac{3 \times r}{2} \times \frac{2}{3}$$

$$p \times \frac{5 \times 2}{3} = \frac{1 \times r}{1} \times \frac{1}{1}$$

$$p \times \frac{5 \times 2}{3} = r \text{ equation #4}$$

Third Step: Substitute the value of "p" from eq#1 in the result above.

$$p \times \frac{5 \times 2}{3} = r \text{ equation #4}$$

$$3\sqrt{7} \times \frac{5 \times 2}{3} = r$$

$$\frac{3\sqrt{7} \times 5 \times 2}{3} = r$$

$$\frac{3\sqrt{7} \times 5 \times 2}{3} = r$$

$$\frac{1\sqrt{7} \times 5 \times 2}{1} = r$$

$$\sqrt{7} \times 5 \times 2 = r$$

$$\sqrt{7} \times 10 = r$$

$$10\sqrt{7} = r \text{ Answer}$$