Using Symbols and Expressions to Think Mathematically – Set 6

(A) *Can use formal operations to solve equations involving real numbers by operating equally on both sides..*

Students may solve these equations slightly differently or in a more simplified way skipping some steps below.

Example 1	Example 2	Example 3
$6x + 4 = 28$	$\dfrac{3}{5} j = 18$	$\dfrac{n + 2}{4} = 7$
$6x = 28 - 4$	$3 \div 5 \times j = 18$	$(n + 2) \div 4 = 7$
$6x = 24$	$3 j = 18 \times 5$	$n + 2 = 7 \times 4$
$x = 24 \div 6$	$3 j = 90$	$n + 2 = 28$
$x = 4$	$j = 90 \div 3$	$n = 28 - 2$
	$j = 30$	$n = 26$

Example 4	Example 5	Example 6
$2x - 7 = 11$	$\dfrac{n+12}{7} = 6$	$\dfrac{z}{120} = \dfrac{3}{100}$
$2x = 11 + 7$	$n + 12 \div 7 = 6$	$z \times 100 = 120 \times 3$
$2x = 18$	$n + 12 = 6 \times 7$	$z = \dfrac{120 \times 3}{100}$
$x = 18 \div 2$	$n + 12 = 42$	$z = \dfrac{360}{100}$
$x = 9$	$n = 42 - 12$	$z = 3.6$
	$n = 30$	

(B) *Can write an equity states of problem situations involving four or more terms or factors, including one unknown.*

Hana made bracelets to give to her friends. She gave <u>3 bracelets</u> to each of her <u>friends</u>, after handing them out she had <u>7 left over</u>, she made <u>22 bracelets altogether</u>. How many friends did she give them too?

(3 bracelets x ? friends) + 7 bracelets = 22 bracelets

$3x + 7 = 22$

Year 8 is made up of <u>3 classes</u>, each with the <u>same number</u> students. There are <u>42 girls</u> and <u>27 students in each class</u>. How many boys are there?

(? boys + 42 girls) ÷ 3 classes = 27 students in each class

$$\dfrac{b + 42}{3} = 27$$

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