

## Concept Questions Ideas for “Transposition”

1. Circle the correct *implications*.

•  $ax + b = c \Rightarrow ax = c + b$

•  $ax + b = c \Rightarrow ax = c - b$

•  $ax + b = c \Rightarrow ax = b + c$

•  $ax + b = c \Rightarrow ax = b - c$

•  $ax + b = c \Rightarrow ax = bc$

•  $ax + b = c \Rightarrow ax = -bc$

•  $ax + b = c \Rightarrow ax = cb$

•  $ax + b = c \Rightarrow ax = -cb$

•  $ax + b = c \Rightarrow ax = \frac{c}{b}$

•  $ax + b = c \Rightarrow ax = -\frac{c}{b}$

•  $ax + b = c \Rightarrow \frac{a}{b}x = \frac{c}{b}$

•  $ax + b = c \Rightarrow \frac{a}{b}x = -\frac{c}{b}$

•  $ax + b = c \Rightarrow \frac{a}{b}x + 1 = \frac{c}{b}$

•  $ax + b = c \Rightarrow \frac{a}{b}x + 1 = -\frac{c}{b}$

•  $ax + b = c \Rightarrow x + b = c + a$

•  $ax + b = c \Rightarrow x + b = c - a$

•  $ax + b = c \Rightarrow x + b = a + c$

•  $ax + b = c \Rightarrow x + b = a - c$

•  $ax + b = c \Rightarrow x + b = ac$

•  $ax + b = c \Rightarrow x + b = -ac$

•  $ax + b = c \Rightarrow x + b = ca$

•  $ax + b = c \Rightarrow x + b = -ca$

4. These statements are either true or false. If true, provide a justification. If false provide a counter-example (i.e. an example where the left-hand side is not equal to the right-hand side). Ignore or account for division by zero.

(a)

$$\frac{1}{a+b} = \frac{1}{a} + \frac{1}{b}$$

(b)

$$\frac{a+b}{a} = 1 + b$$

(c)

$$\frac{a+b}{c} = \frac{a}{c} + \frac{b}{c}$$

(d)

$$\frac{a^2+a}{a} = a+1$$

(e)

$$\frac{a^2+2a}{2a} = a^2+1$$

(f)

$$\frac{a(b+c)+3a}{a} = b+c+3a$$

(g)

$$\frac{a(b+c)+3a}{a} = b+c+3$$

(h)

$$\frac{m^2-n^2}{m-n} = m+n$$

(i)

$$\frac{m^2+n^2}{m+n} = m+n$$