

Task #9: Expression Pairs: Equivalent or Not?

$a+(3-b)$ and $(a+3)-b$

$2+\frac{k}{5}$ and $10+k$

$(a-b)^2$ and a^2-b^2

$3(z+w)$ and $3z+3w$

$-a+2$ and $-(a+2)$

$\frac{1}{x+y}$ and $\frac{1}{x} + \frac{1}{y}$

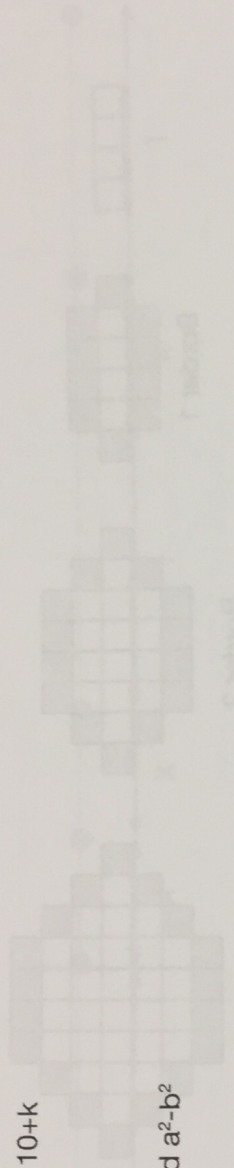
x^2+4x^2 and $5x^2$

$\sqrt{x^2+y^2}$ and $x+y$

$bc-cd$ and $c(b-d)$

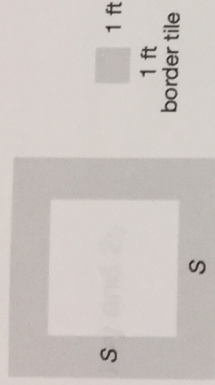
$(2x)^2$ and $4x^2$

$2x+4$ and $x+2$



Task 5: Swimming Pool

You want to build a square swimming pool in your backyard. Let s denote the length of each side of the swimming pool (measured in feet). You plan to surround the pool by square border tiles, each of which is 1 foot by 1 foot (see figure).



A teacher asks her students to find an expression for the number of tiles needed to surround such a square pool, and sees the following responses from her students:

$$4(s+1)$$

$$s^2$$

$$4s+4$$

$$2s+2(s+2)$$

$$4s$$

Is each mathematical model correct or incorrect? How do you know?

$$4(s+1)$$

$$s^2$$

$$4s+4$$

$$2s+2(s+2)$$

$$4s$$

Task #4: Miles to Kilometers

The students in Mr. Sanchez's class are converting distances measured in miles to kilometers. To estimate the number of kilometers, Abby takes the number of miles, doubles it, then subtracts 20% of the result. Renato first divides the number of miles by 5 and then multiplies the result by 8.

- a. Write an algebraic expression for each method.

- b. Use your answer to part (a) to decide if the two methods give the same answer.
