Different forms

It is important to be able to convert expressions between the different forms:

expanded form factorised form completed square form

In this problem there are 4 sets of three equivalent expressions, however, some expressions are missing. Match the sets and find the 3 missing expressions.

$a^2 - 2a - 8$		$a^2 - 8a + 15$
	$a^2 + 2a - 15$	$(a + 2)(a + 4)$
$(a + 1)^2 - 16$	$(a - 3)(a - 5)$	
$(a + 5)(a - 3)$	$(a - 1)^2 - 9$	$(a + 3)^2 - 1$

Different forms

Solutions on the next slide….

Different forms Solutions

$a^2 - 2a - 8$	$(a-4)^2 - 1$	$a^2 - 8a + 15$
$a^2 + 6a + 8$	$a^2 + 2a - 15$	$(a+2)(a+4)$
$(a+1)^2 - 16$	$(a-3)(a-5)$	$(a-4)(a+2)$
$(a+5)(a-3)$	$(a-1)^2 - 9$	$(a+3)^2 - 1$

Extra Puzzles

What is the value of

$$\frac{\frac{(5^2-3^2)}{5+3}+\frac{(4^2-2^2)}{4+2}+\frac{(3^2-1^2)}{3+1}}{2}\ ?$$

Extra Puzzles

Given that

$$55^2 - 45^2 = (55 + 45)(55 - 45) = 1000$$

and

$$60^2 - 40^2 = (60 + 40)(60 - 40) = 2000$$

Find numbers a and b such that $a^2 - b^2 = 3000$

Find numbers c and d such that $c^2 - d^2 = 4000$

Find numbers e and f such that $e^2 - f^2 = 100\,000$