

DO NOW

<p>1. Simplify: $(x+3)(x-3)$</p> <div style="text-align: center;"> $\begin{array}{ c c } \hline x+3 & \\ \hline x^2 & 3x \\ \hline -3x & -9 \\ \hline \end{array}$ <p style="margin-left: 100px;">x</p> <p style="margin-left: 100px;">-3</p> <p style="margin-left: 100px;">$x^2 - 9$</p> </div>	<p>2. Simplify: $(4-y)(4+y)$</p> <div style="text-align: center;"> $\begin{array}{ c c } \hline 4 & -y \\ \hline 16 & -4y \\ \hline 4y & -y^2 \\ \hline \end{array}$ <p style="margin-left: 100px;">4</p> <p style="margin-left: 100px;">$+y$</p> <p style="margin-left: 100px;">$16 - y^2$</p> </div>
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¹⁵ **Aim: How do we factor using the D.O.T.S method?**

3. Identify the first 17 perfect squares starting with 1

1^2 2^2 3^2 4^2 5^2 6^2 7^2 8^2 9^2 10^2 11^2 12^2 13^2 14^2 15^2

1, 4, 9, 16, 25, 36, 49, 64, 81, 100, 121, 144, 169, 196, 225

4. Identify the first 12 perfect variables.

$x^2, x^4, x^6, x^8, x^{10}, x^{12}, x^{14}, x^{16}, x^{18}, x^{20}, x^{22}, x^{24}$

Any variable with an even exponent is a perfect square.

Difference
 of
 two
 squares

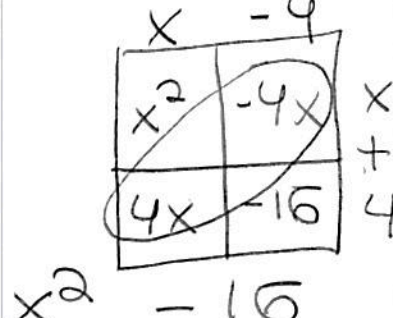
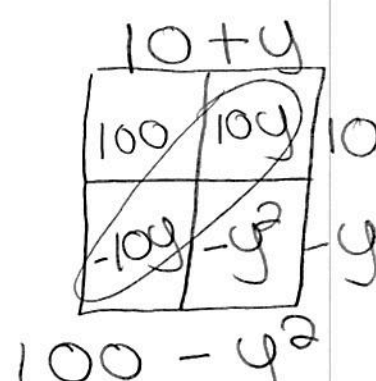
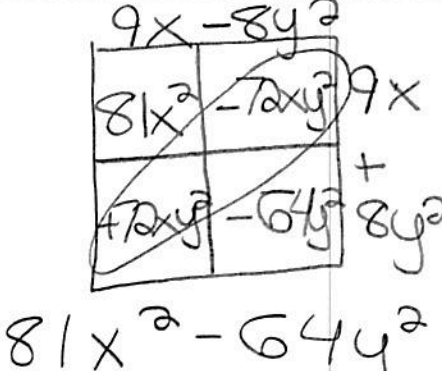
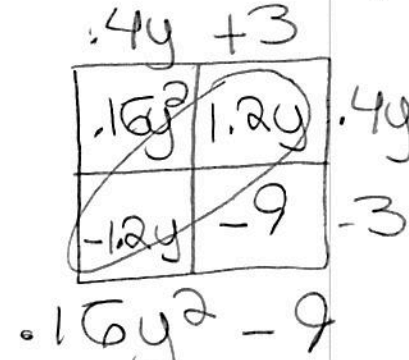
How do I identify DOTs?

$$a^2 - b^2$$

Perfect Square

minus

Perfect Square

#	Question	Check
5.	$\sqrt{x^2} - \sqrt{16}$ $(x - 4)(x + 4)$	
<p>Steps for Factoring D.O.T.S :</p> <ol style="list-style-type: none"> 1) two perfect squares with subtraction sign (binomial) 2) "Double Bubble" with opposite signs (+) (-) 3) Find square root of each term in order. 4) Check by Double Distributing (shortcut!) or Tabular method 		
6.	$\sqrt{100} - \sqrt{y^2}$ $(10 + y)(10 - y)$	
7.	$\sqrt{81x^2} - \sqrt{64y^4}$ $(9x - 8y^2)(9 + 8y^2)$	
8.	$\sqrt{0.16y^2} - \sqrt{9}$ $(.4y + 3)(.4y - 3)$	

$$9. \sqrt{4x^6} - \sqrt{25y^{12}}$$

$$(2x^3 - 5y^6)(2x^3 + 5y^6)$$

$$10. \sqrt{9x^2} - \sqrt{1}$$

$$(3x + 1)(3x - 1)$$

$$11. \sqrt{25x^{16}} - \sqrt{36y^{100}}$$

$$(5x^8 - 6y^{50})(5x^8 + 6y^{50})$$

$$12. y^2 - \frac{16}{49}$$

$$\left(y + \frac{4}{7}\right)\left(y - \frac{4}{7}\right)$$

13. Which expression is equivalent to $\sqrt{121 - x^2}$?

1) $(x - 11)(x - 11)$

2) $(x + 11)(x - 11)$

3) $(11 - x)(11 + x)$

4) $(11 - x)(11 - x)$

14. Ann correctly factors an expression that is the difference of two perfect squares, her factors could be

1) $(2x + y)(x - 2y)$

2) $(2x + 3y)(2x - 3y)$

3) $(x - 4)(x - 4)$

4) $(2y - 5)(y - 5)$

GCF & DOTS Mixed!

<p>15. $\frac{3x-3y}{3}$ G.C.F $3(x-y)$</p>	<p>16. $\sqrt{4x^2-9}$ D.O.T.S. $(2x+3)(2x-3)$</p>
<p>17. $\frac{16x^2-6x^3}{2x^2}$ G.C.F $2x^2(8-3x)$</p>	<p>18. $\sqrt{x^2-16}$ D.O.T.S. $(x-4)(x+4)$</p>
<p>19. $\sqrt{x^2-y^2}$ D.O.T.S. $(x-y)(x+y)$</p>	<p>20. Which polynomial cannot be factored? a) $3x+9y$ G.C.F b) x^2-225 D.O.T.S c) $2x^2-4x-6$ G.C.F d) $4x^2+25$</p>

Exit Card: Factor $49-x^2$