Spoons-Algebra Style

The Object

Be the first player to hold a set of four cards with the same solution.

What You'll Need

A set of four matching solution cards per player. If playing with less than 13 players divide the deck and only use enough matching sets for the amount of players. You will also need spoons equaling one less than the number of players. For example if you have eight players you will need seven.

Playing The Game

The spoons are placed in the center of the table within reach of all players and four cards are dealt to each player. Players take one from the four they were dealt and passes it the player to their left. They then receive a card passed from the player on their right. All players simultaneously pass a single unwanted card face down to their left, and then take the card that the player to their right passed to them. This continues until someone collects four of a kind.

Winning The Game

When a player collects four cards with the same solution they say nothing. Instead they quietly reach to the spoons in the center of the table and as subtly as possible place one in front of them. Once a player has taken one, all the other players must do the same, even if they themselves do not have four of a kind.

The player left empty handed is out.

Geometry Bingo

The Object

Get a BINGO!

What You'll Need

A bingo card per person

A Question sheet or PowerPoint

Playing The Game

Students choose where to put their “answers” on their card. Once their cards are full, the host asks questions and students mark the answers on their cards.

Winning The Game

Cross off all the squares in one row or column before your classmates.

GEOMETRY BINGO KEY

Questions	Answers
1. The sum of exterior angles, one at each vertex, of a nonagon, in degrees.	360
2. The sum of complementary angles, in degrees.	90
3. In a 45-45-90 triangle, if a leg is 5, what is the hypotenuse?	$5\sqrt{2}$
4. In a regular polygon, all sides are __?__.	equal
5. If two triangles are similar, corresponding angles are ___?___.	congruent
6. In a right triangle, if a = 15, b = 20, then c = __?__.	25
7. If $c^2 < a^2 + b^2$, what type of triangle is this?	Acute
8. In a 30-60-90 triangle, if the hypotenuse is 12, the short leg is __?__.	6
	60
9. A quadrilateral with exactly one pair of opposite sides parallel.	trapezoid
10. Sum of the interior angles of a pentagon, in degrees.	540
11. The sum of supplementary angles, in degrees.	180
12. Adjacent angles share a side and a(n) _____.	Vertex
13. The measure of an interior angle of a regular Hexagon, in degrees.	120
14. If $c^2 > a^2 + b^2$, what type of triangle is this?	Obtuse
15. A quadrilateral with congruent sides and congruent angles is a(n) ___?___.	square
16. In a right triangle, __?__ is a congruence property.	HL
17. The sum of the interior angles of a dodecagon, in degrees.	1800
18. The area of a triangle with b = 14", h = 10" is ___?___ sq. in.	70
	inductive
19. A quadrilateral with one pair of opposite sides congruent and parallel.	parallelogram
20. Something we accept that is true (cannot prove).	Postulate
21. In this quadrilateral, one pair of opposite angles is congruent.	kite
22. If ABCD is a parallelogram, and the $m\angle A = 45^o$, what is the $m\angle B$, in degrees?	135
	Theorem
23. If corresponding sides of two triangles are proportional, the triangles are ___?___.	similar
24. A conclusion based on facts is ___?___ reasoning.	Deductive
25. If QRST is a parallelogram, and the $m\angle S = 140^o$, what is the $m\angle Q$, in degrees?	140

Factoring Bingo

Objective:

Correctly factor polynomials and be the first to get five factors in a row.

What you will need:

One blank BINGO card per student (or pair of students)
One list of possible factors per pair or group
Work space (copied on back of BINGO card)
Some kind of marker – crayon, beans, M&Ms, etc.
List of equations to be factored

Playing the game:

This activity is designed to give students practice in factoring polynomials. You can choose equations based on patterns or concepts (common factors) that you want them to focus on, or choose the equations randomly.

Each student will create their own BINGO card (use colored marked to avoid changes) using the factors from the factor list – one factor per box. Each factor can only be used once.

Start the game by writing an equation on the board and have students factor it. They must keep their work to show that they factored the equation. If students have those factors on their board, they can cover them up with their markers. (If you are using beans as markers, the work needs to be on a separate page.) Continue writing equations on the board until a student calls BINGO. Check their work to confirm correct factoring. Continue until you have a few more BINGOs or continue to "black out."

Factor Bingo Equations

1. $2x + 2y$	$2(x + y)$
2. $x^2 – 4x + 3$	$(x – 3)(x – 1)$
3. $x^2 + x – 20$	$(x + 5)(x – 4)$
4. $x^2 – 6xy + 5y^2$	$(x – 5y)(x – y)$
5. $6x^2 + 13x + 6$	$(2x + 3)(3x + 2)$
6. $6x^2 – 5x – 4$	$(3x – 4)(2x + 1)$
7. $2x^2 – 5x + 2$	$(2x – 1)(x – 2)$
8. $x^2 + x – 6$	$(x + 3)(x – 2)$
9. $x^2 – 25$	$(x + 5)(x – 5)$
10. $4x + 12$	$4(x + 3)$
11. $4x^2 – 9$	$(2x – 3)(2x + 3)$
12. $2x^2 + 6x + 4$	$2(x + 1)(x + 2)$
13. $3x^2 + 4x$	$x(3x + 4)$
14. $9x^2 + 12x$	$3x(3x + 4)$
15. $9x^2 – 49$	$(3x – 7)(3x + 7)$
16. $2x^2 + 30x$	$2x(x + 15)$
17. $x^2 – 8x + 12$	$(x – 6)(x – 2)$
18. $x^2 + 11x + 18$	$(x + 9)(x + 2)$
19. $x^2 + 2xy – 15y^2$	$(x + 5y)(x – 3y)$
20. $4x^2 – 11x – 3$	$(4x + 1)(x – 3)$
21. $8x^2 – 2x – 3$	$(2x + 1)(4x – 3)$
22. $3x – 9$	$3(x – 3)$
23. $x^2 + 2x + 4$	$(x + 2)(x+ 2)$
24. $x^2 + 12x + 36$	$(x + 6)(x + 6)$
25. $2x^2 – 9x - 35$	$(2x +5)(x – 7)$
26. $9x^2 – 1$	$(3x + 1)(3x – 1)$
27. $5x – 30$	$5(x – 6)$
28. $5x^2 – 15x$	$5x(x – 3)$
29. $4x^2 – 16$	$4(x – 2)(x + 2)$
30. $2x^2 – 2$	$(2x – 2)(x + 1)$

Factors

2	3	4	5	x	2x	3x
4x	5x	(x + y)	(x – y)	(x – 1)	(x – 2)	(x – 3)
(x – 4)	(x – 5)	(x – 6)	(x – 7)	(x – 5y)	(x – 3y)	(x + 5y)
(2x + 1)	(2x – 1)	(2x + 3)	(2x – 3)	(2x + 5)	(3x + 1)	(3x – 1)
(3x + 2)	(3x + 4)	(3x – 4)	(3x + 7)	(3x – 7)	(4x + 1)	(4x – 3)
(x + 1)	(x + 2)	(x + 3)	(x + 5)	(x + 6)	(x + 9)	(x + 15)

Factors

2	3	4	5	x	2x	3x
4x	5x	(x + y)	(x – y)	(x – 1)	(x – 2)	(x – 3)
(x – 4)	(x – 5)	(x – 6)	(x – 7)	(x – 5y)	(x – 3y)	(x + 5y)
(2x + 1)	(2x – 1)	(2x + 3)	(2x – 3)	(2x + 5)	(3x + 1)	(3x – 1)

$(3x + 2)$	$(3x + 4)$	$(3x – 4)$	$(3x + 7)$	$(3x – 7)$	$(4x + 1)$	$(4x – 3)$
$(x + 1)$	$(x + 2)$	$(x + 3)$	$(x + 5)$	$(x + 6)$	$(x + 9)$	$(x + 15)$

B	I	N	G	O
		FREE SPACE		

Factoring Puzzles

Objective:

Match correct factors to quadratic equations.

What you will need:

Factor puzzle pieces
Page to glue the puzzle together
Page to show work for factoring
Solution (for teacher!)

Playing the game:

Have students cut apart the puzzle pieces. Match factors and equations and put the puzzle together

Name: _____

My Factoring Puzzle

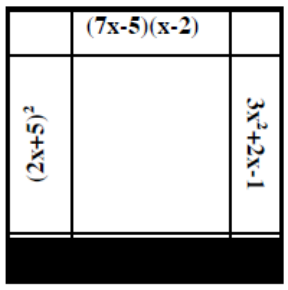
Factoring Puzzle I

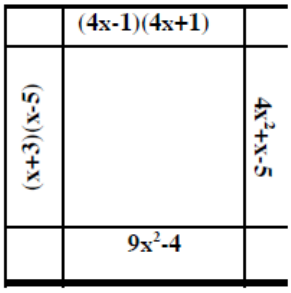
Carefully cut apart the puzzle squares. Arrange them by matching correct factors and equations. Glue the final arrangement to your My Factoring Puzzle page. Once the puzzle is complete change the numbers in the middle of the squares into letters for a special message. Show all your work on a separate piece of paper.

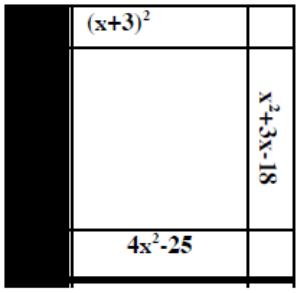
Once the puzzle is complete,		change the numbers		into letters,
$x^2 - 8x + 15 = 3$ **20** $x^2 + x - 20 = 0$	$x = 2$ or 6 **5** $x^2 + 10x + 7 = 2x - 9$	$x = -4$ **12** $x^2 + x - 90 = 2x$	$x = -9$ or 10 **12** $3x^2 + 5x - 3 = 2x^2 - 7$	$x = -1$ or -4 **13** $x^2 - 5x - 14 = 0$
$x = -5$ or 4 **5** $x^2 + 9x - 22 = 0$	$x = 2$ or -11 **1** $x^2 - 8x = -5x - 2$ $x^2 - 30x + 200 = 0$	$x = 3$ or 8 $x = 1$ or 2 **10** $x^2 - 10x + 25 = 0$	$x = 5$ **15** $x^2 + 30x + 200 = 0$ $x^2 + 6x + 21 = -4x$	$x = -2$ or 7 $x = -10$ or -20 **11**
5 $x^2 + 6x + 9 = 0$ $x^2 - 5x + 4 = 0$	$x = 10$ or 20 $x = -3$ **&** $x^2 + 8x + 12 = 0$	$x = -2$ or -6 **7** $x^2 - 2x - 24 = 0$ $x - 20 = 10 - x^2$	$x = -7$ or -3 $x = 6$ or -4 **5** $x^2 - 11x + 30 = 0$	$x = 5$ or 6 **20** $x^2 - 16x + 100 = 36$
$x = 1$ or 4 **3** $x^2 - 20 = x$	$x = 5$ or -4 **1** $x^2 + x - 90 = 0$ and then you'll get	$x = 5$ or -6 $x = 9$ or -10 **14** $x^2 + 9x = -14$	$x = -2$ or -7 **4** $x^2 + 20x - 30 = 7x$ a tasty treat!	$x = 8$ $x = -15$ or 2 **25**

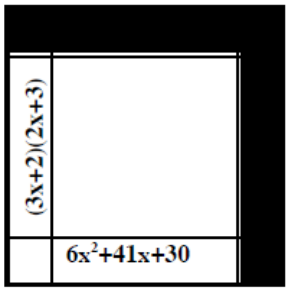
Factoring Puzzle II

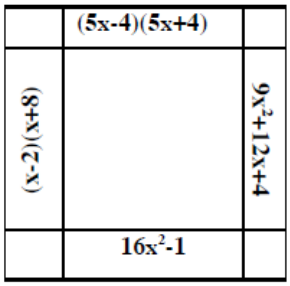
Carefully cut apart the puzzle squares. Arrange them by matching correct factors and equations. Glue the final arrangement to your My Factoring Puzzle page. Show all your work on a separate piece of paper.

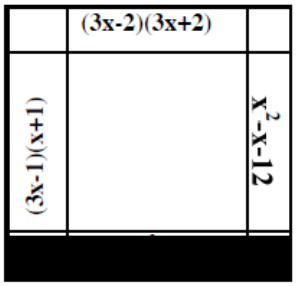


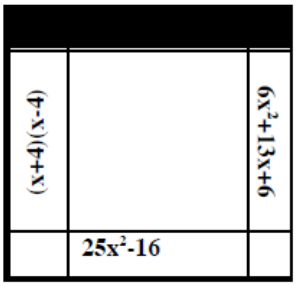


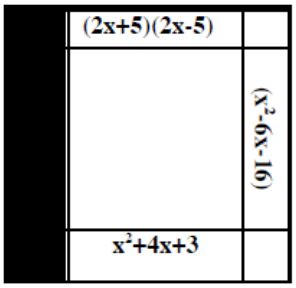


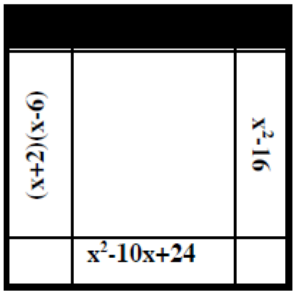


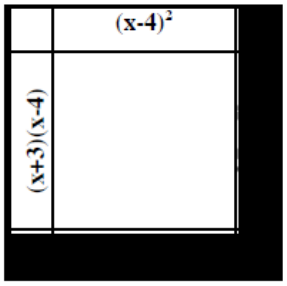


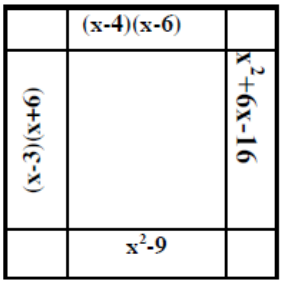


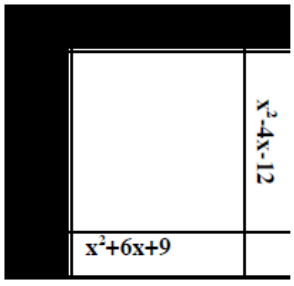


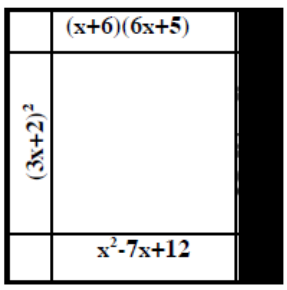


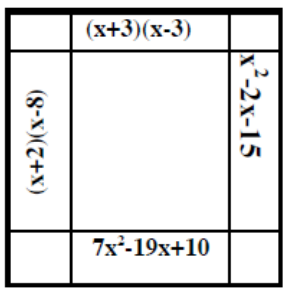


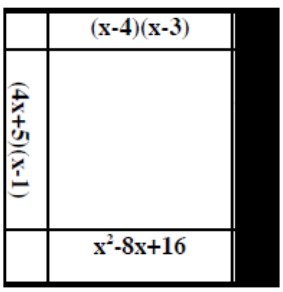


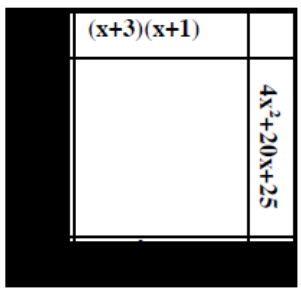








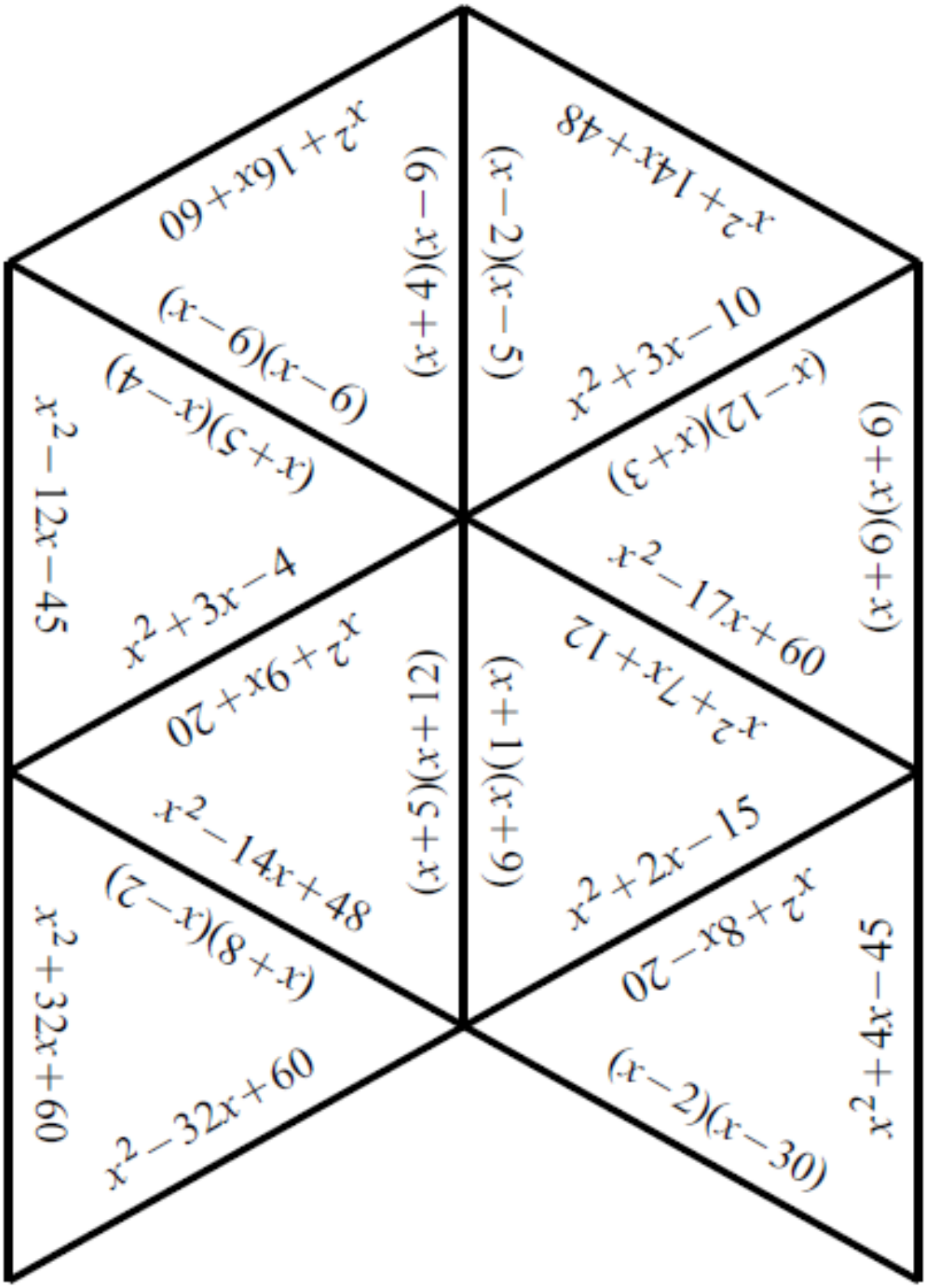




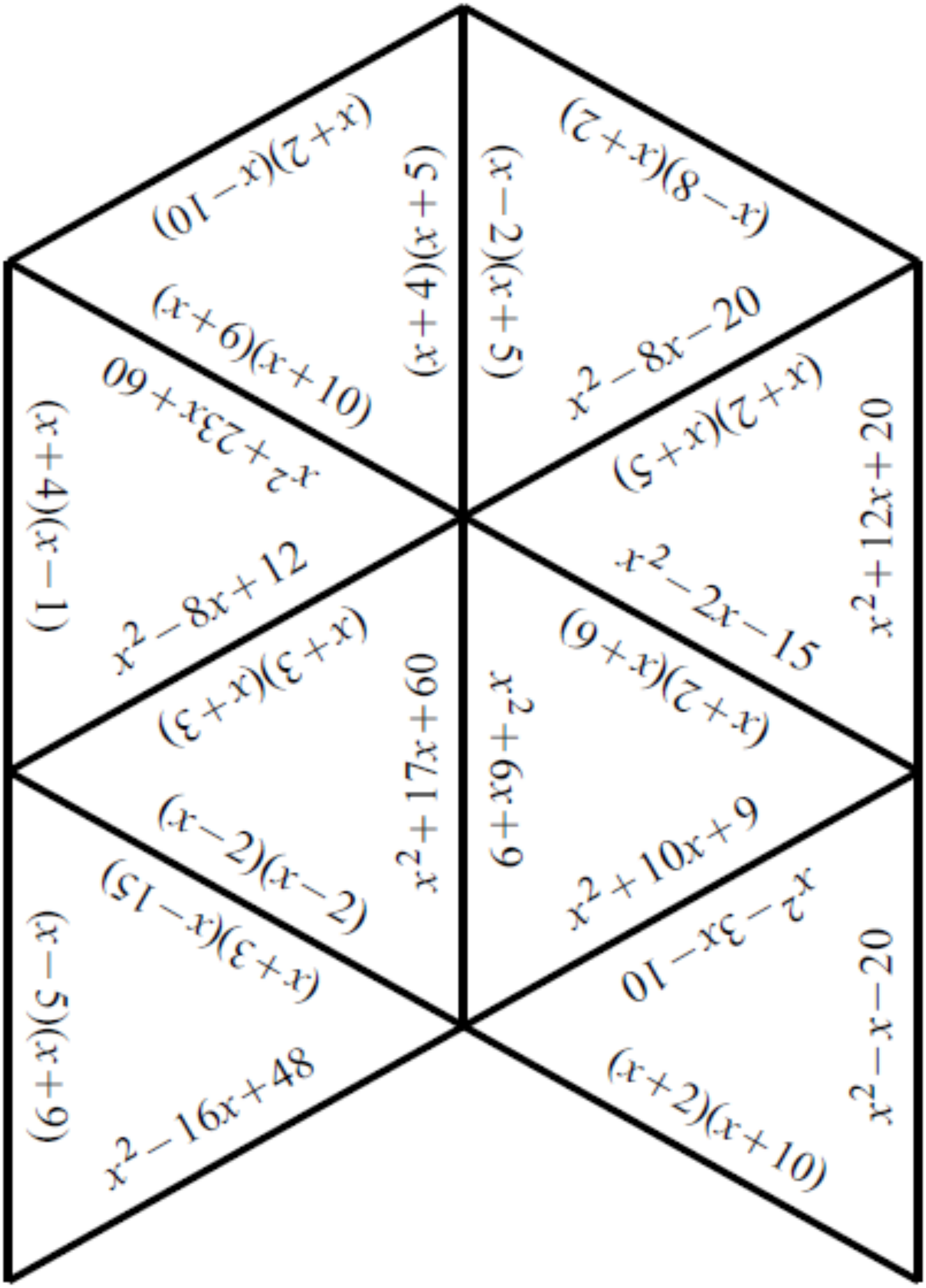
Factoring Puzzle III

Carefully cut apart the puzzle squares. Arrange them by matching correct factors and equations. Glue the final arrangement to your My Factoring Puzzle page. Show all your work on a separate piece of paper. The triangles will form a hexagon.

Section 1

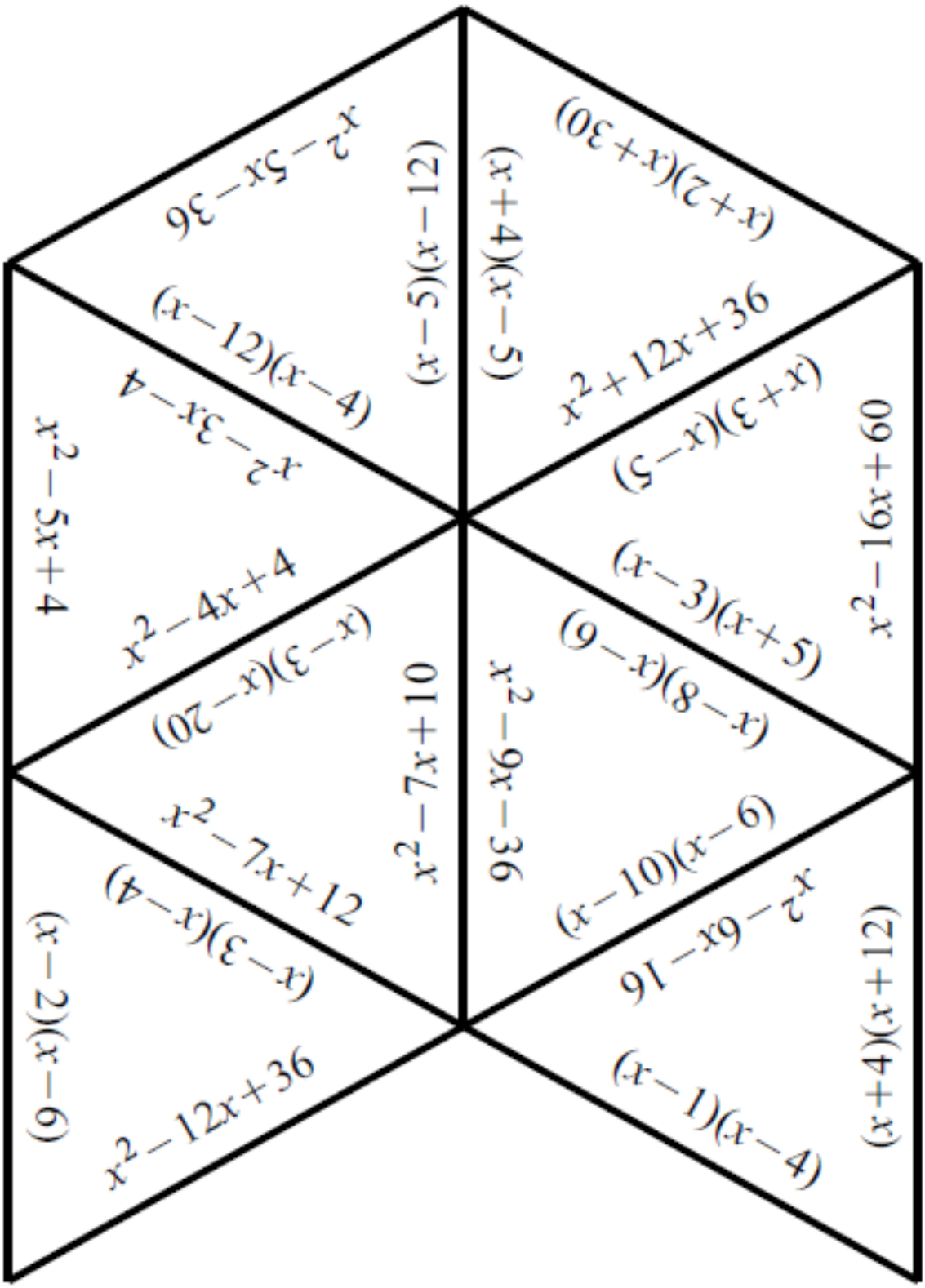

$x^2+14x+48$
$(x-2)(x-5)$
$x^2+3x-10$
$(x-12)(x+3)$
$(x+9)(9+x)$
$x^2-17x+60$
$x^2+7x+12$
$(x+1)(x+9)$
$x^2+2x-15$
$x^2+8x-20$
$(30-x)(2-x)$
$x^2+4x-45$
$x^2+16x+60$
$(x-6)(9-x)$
$(x+5)(x-4)$
$x^2-12x-45$
$(4+x)(6-x)$
x^2+3x-4
$x^2+9x+20$
$(x+5)(x+12)$
$x^2-14x+48$
$(x+8)(x-2)$
$x^2+32x+60$
$x^2-32x+60$

Section 2



$(x+2)(x-10)$
$(x+4)(x+5)$
$(x-2)(x+5)$
$(x-8)(x+2)$
$(x+6)(x+10)$
$x^2-8x-20$
$x^2+23x+60$
$(x+2)(x+5)$
$(x+4)(x-1)$
$x^2+12x+20$
$x^2-8x+12$
$x^2-2x-15$
$(x+3)(x+3)$
$x^2+17x+60$
x^2+6x+9
$(x+2)(x+6)$
$(x-2)(x-2)$
$x^2+10x+9$
$(x+3)(x-15)$
$x^2-3x-10$
$(x-5)(x+9)$
x^2-x-20
$x^2-16x+48$
$(x+2)(x+10)$

Section 3


$x^2-5x-36$
$(x-5)(x-12)$
$(x+2)(x+30)$
$(x+4)(x-5)$
$x^2+12x+36$
$(x-12)(x-4)$
x^2-3x-4
$(x+3)(x-5)$
$x^2-16x+60$
x^2-5x+4
x^2-4x+4
$(x-3)(x-20)$
$(x-3)(x+5)$
$(x-8)(x-6)$
$x^2-7x+10$
$x^2-9x-36$
$x^2-7x+12$
$(x-3)(x-4)$
$(x-10)(x-6)$
$x^2-6x-16$
$(x-2)(x-6)$
$x^2-12x+36$
$(x-1)(x-4)$
$(x+4)(x+12)$

Polynomial Puzzle Squares

The Object

Match the expressions to place all the pieces into a square.

Alternative (simpler version):Place them in a line (domino style)

What You'll Need

A puzzle square tile set (envelope)

Playing The Game

Match the expressions on adjacent sides to put the puzzle back together. All adjacent expressions should be equivalent.

Winning The Game

Getting all the pieces in the right place to complete the puzzle.

	$(x + 2)(x - 2)$			$(4x - 1)^2$			$(6x + 1)(x - 2)$			$(x + 1)(x - 1)$	
$(5x - 4)^2$		$x^2 - 4x - 12$	$(x + 2)(x - 6)$		$x^2 - 16$	$(x + 4)(x - 4)$		$6x^2 + 13x + 6$	$(3x+ 2)(2x+3)$		$x^2 - 14x = 24$
	$x^2 + 6x + 9$			$x^2 - 10x+24$			$25x^2 - 16$			$6x^2 + 41x + 30$	
	$(x + 3)^2$			$(x - 4)(x -6)$			$(5x - 4)(5x+4)$			$(x + 6)(6x + 5)$	
$(x - 2)(x - 9)$		$x^2 + 3x - 18$	$(x - 3)(x + 6)$		$x^2 +6x - 16$	$(x - 2)(x + 8)$		$9x^2 - 12x + 4$	$(3x-2)^2$		$x^2 + 7x -18$
	$4x^2 - 25$			$x^2 - 9$			$16x^2 - 1$			$x^2 - 7x + 12$	
	$(2x-5)(2x +5)$			$(x+3)(x - 3)$			$(4x - 1)(4x+1)$			$(x - 4)(x - 3)$	
$(x + 2)(x + 5)$		$x^2 -6x - 16$	$(x + 2)(x - 8)$		$x^2 - 2x - 15$	$(x + 3)(x - 5)$		$4x^2 + x - 5$	$(4x + 5)(x - 1)$		$6x^2 - x - 2$
	$x^2 + 4x + 3$			$7x^2 - 19x +10$			$9x^2 - 4$			$x^2 - 8x + 16$	
	$(x + 3)(x + 1)$			$(7x - 5)(x-2)$			$(3x - 2)(3x+2))$			$(x - 4)^2$	
$(2x-5)(2x+1)$		$4x^2 +20x + 25$	$(2x +5)^2$		$3x^2 + 2x - 1$	$(3x - 1)(x + 1)$		$x^2 - x - 12$	$(x + 3)(x - 4)$		$x^2 + 16$
	$25x^2 + 20x+4$			$x^2 + 9$			$x^2 + 3x - 10$			$x^2 - 15$	

SPLAT!

The Object

Be the team to smack the correct answer with the swatter the most times.

What You'll Need

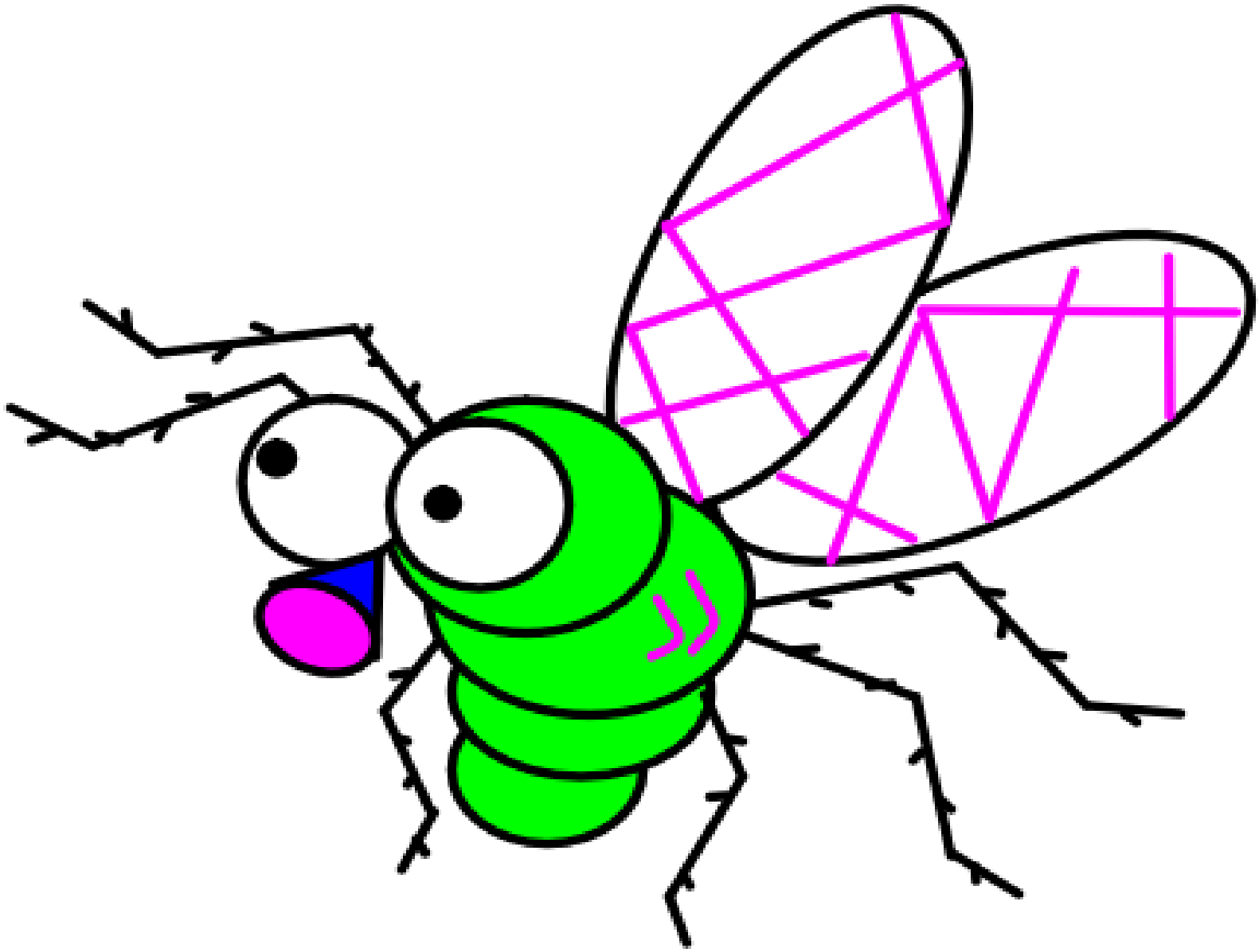
Fly swatters
Answer cards
Question List

Playing The Game

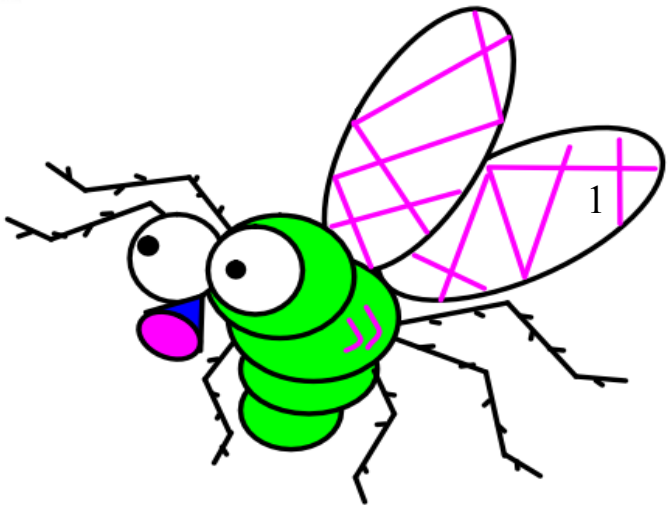
Split into the number of teams equal to the number of swatters you have. Team members take turns being the “swatter”. Read or place a question on the overhead, doc camera or projector. Swatters search the room (with help form their teammates) and try to be the first to swat the correct answer. Point can be awarded for 1st, 2nd and 3rd or just for first.

Winning The Game

The team with the most number of points at the end of the game wins.

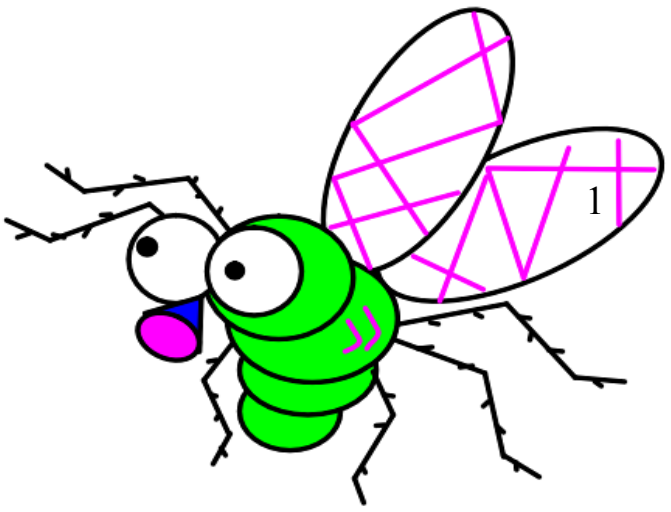


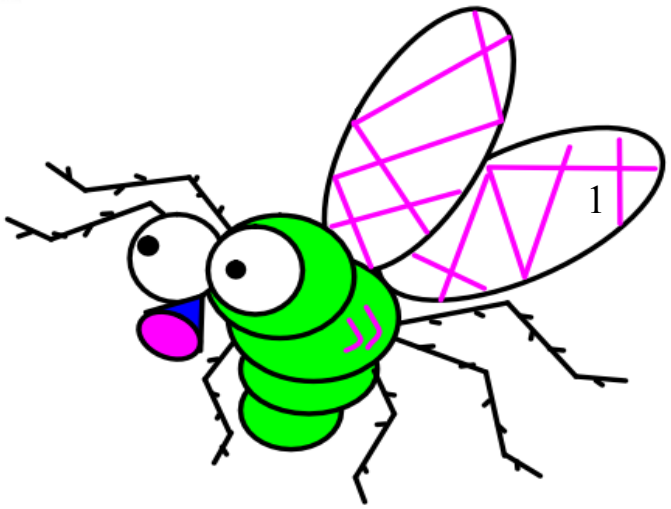
Splat!



$$x^2 - 16$$

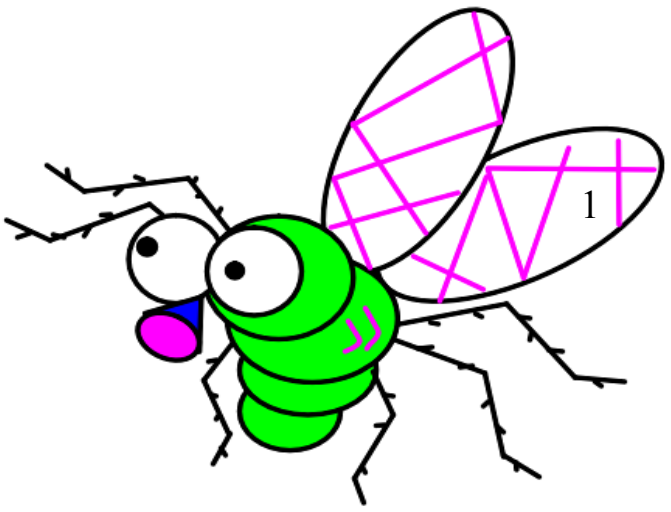
$$x^2 - 25$$

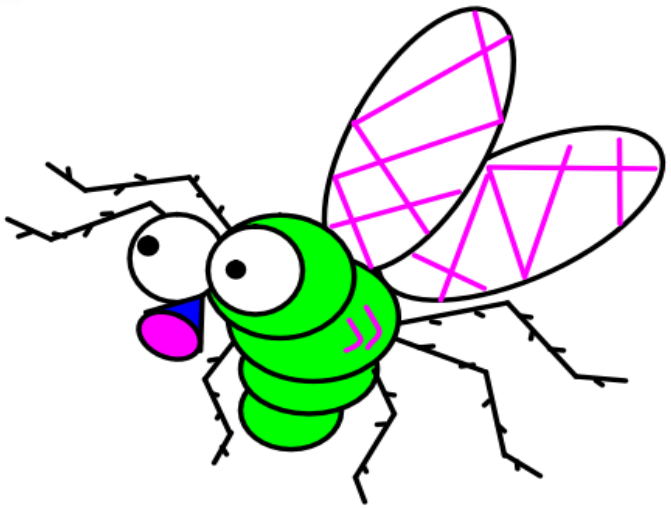




$$x^2 - 49$$

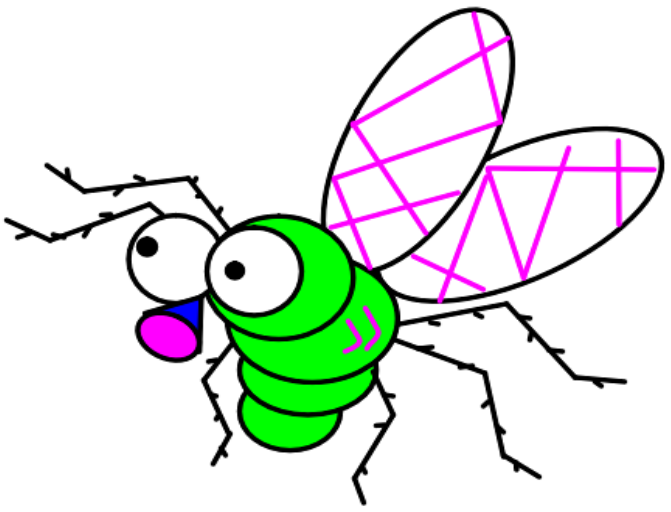
$$x^2 - 121$$

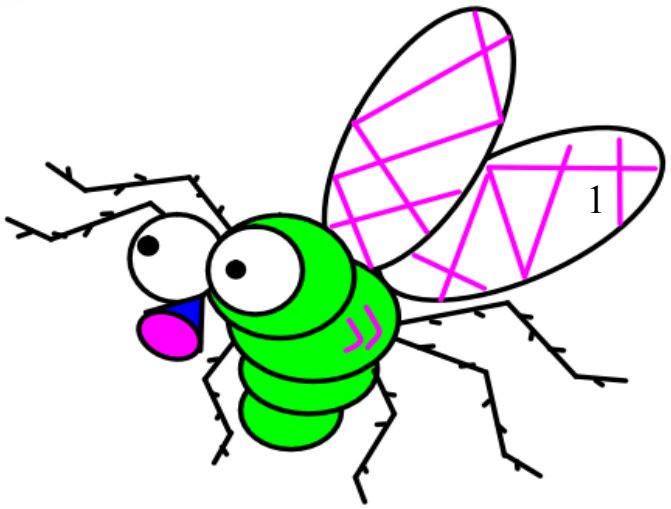




$$4x^2 - 81$$

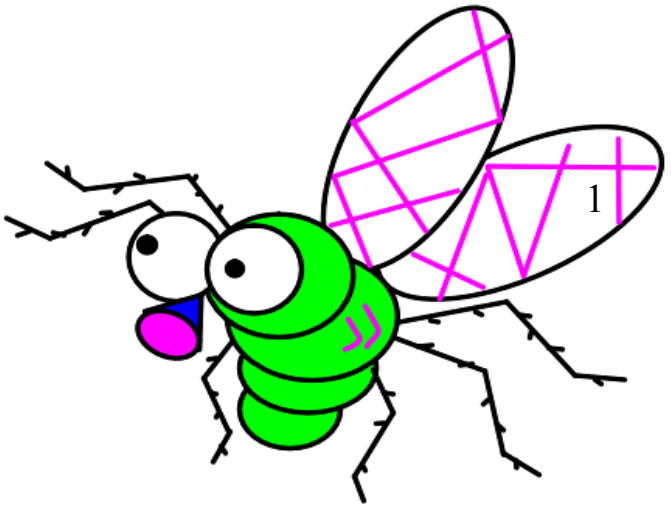
$$9x^2 - 1$$

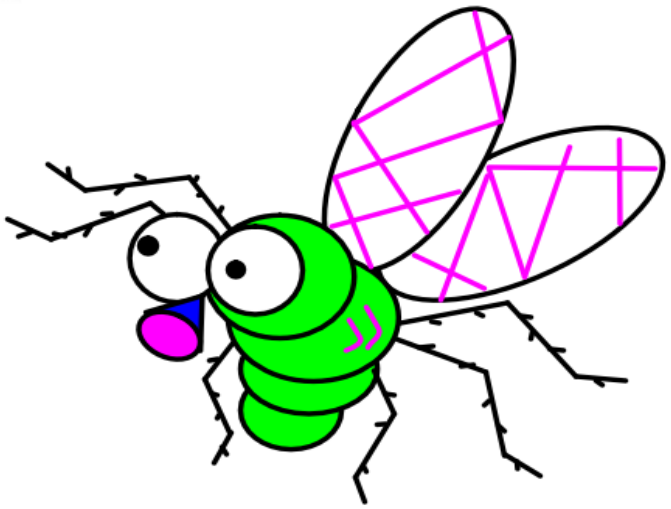




$$x^2-5x+6$$

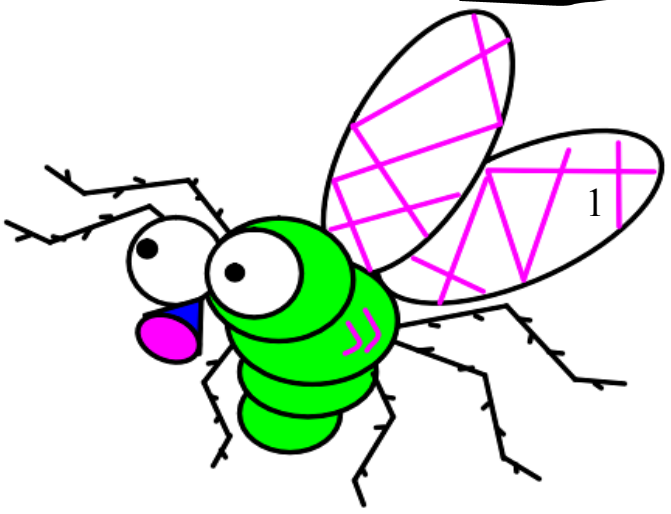
$$x^2+7x-8$$

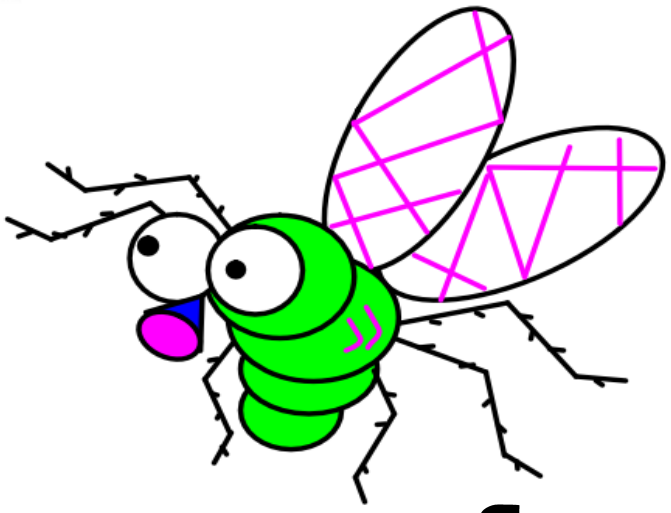




$$x^2-3x-4$$

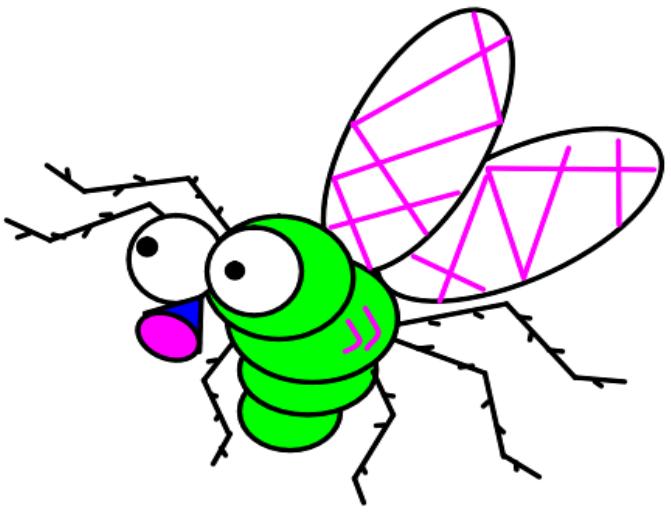
$$x^2-3x+2$$

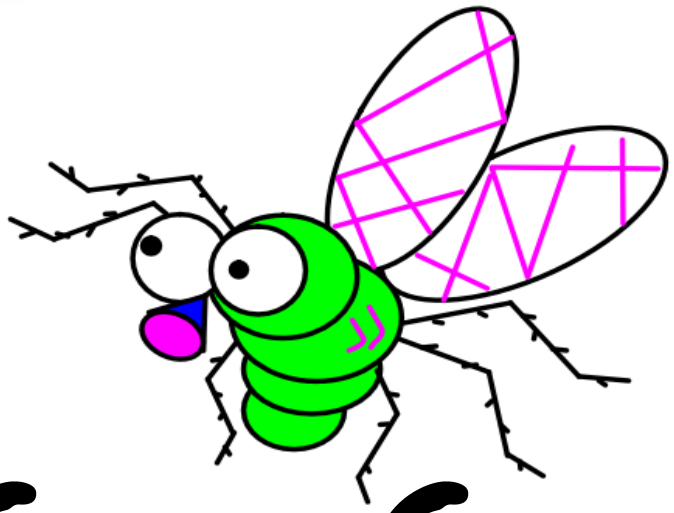




$$ax+bx+3a+3b$$

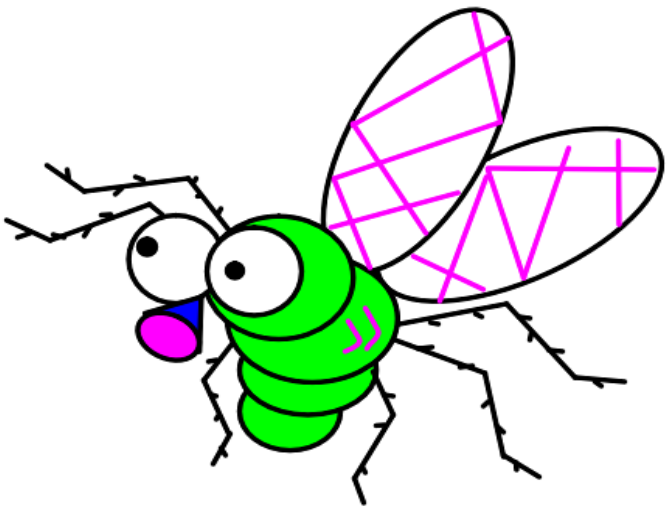
$$5x-5y+cx-cy$$

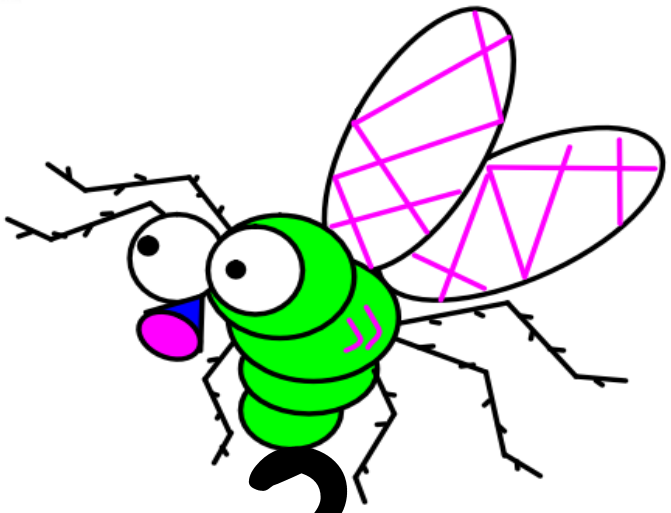




$$x^2-xc+6x-6c$$

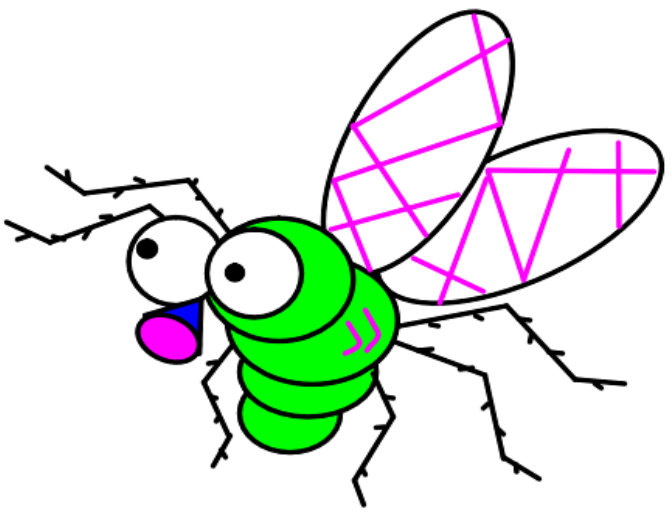
$$b^2-bd+5b-5d$$

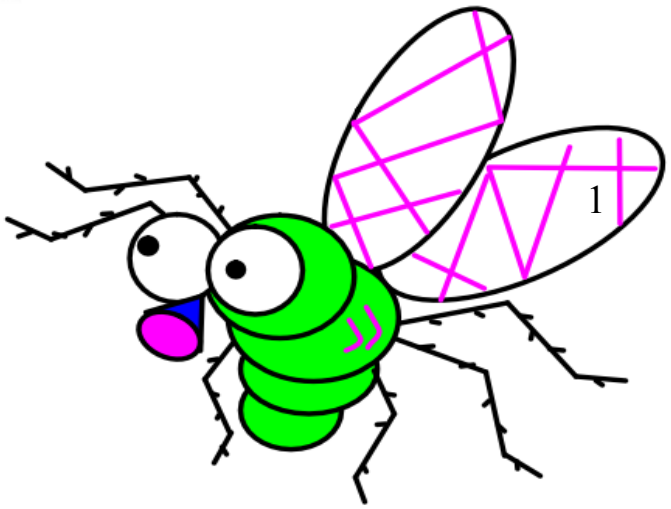




$$a^2 - b^2$$

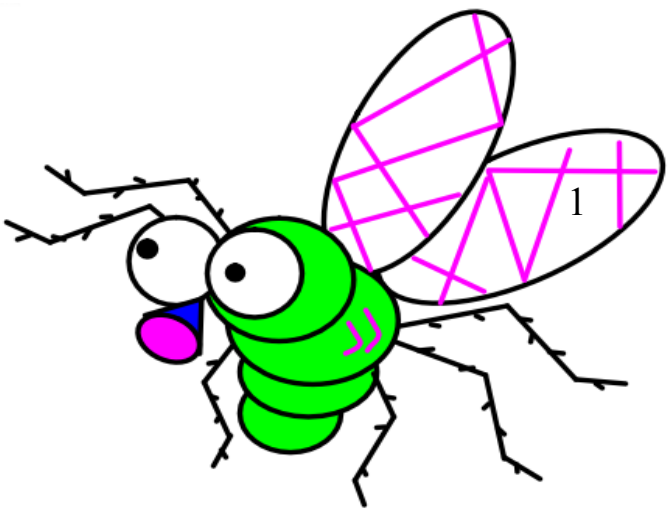
$$4y^2 - 9w^2$$

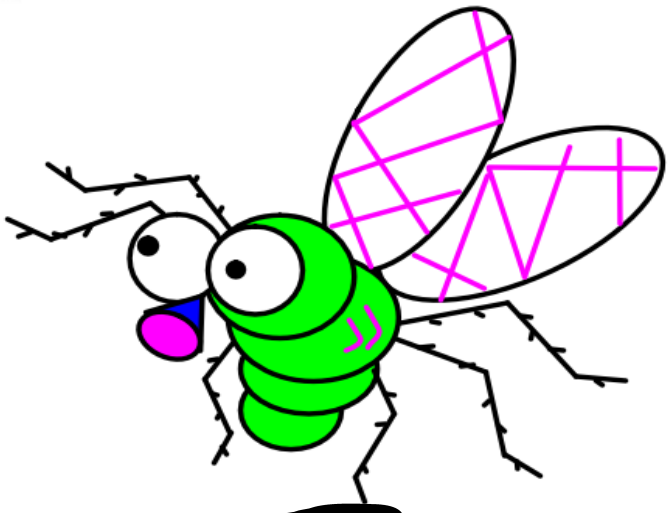




$$2x-8$$

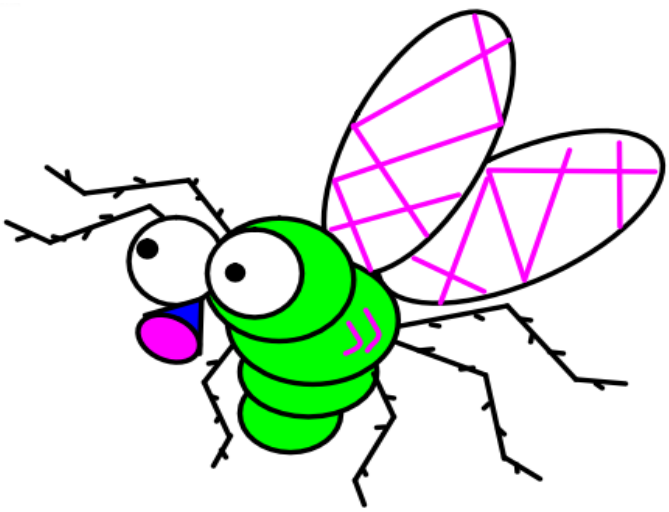
$$5x-25$$

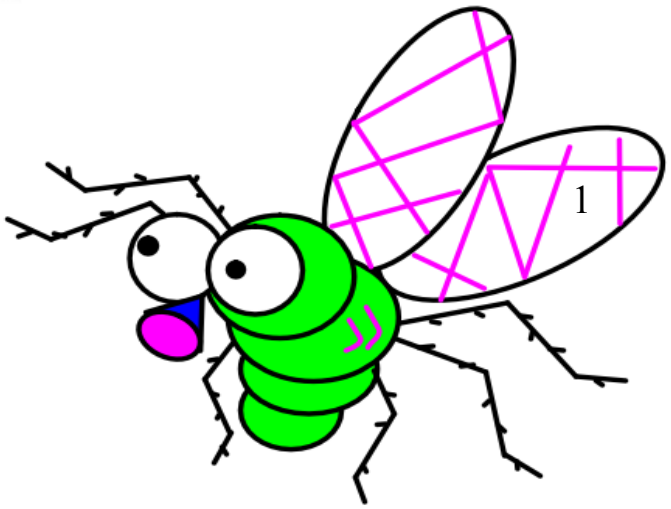




$$6x-15$$

$$14x+42$$





$$3x+9$$

$$4x+16$$