

# Did You Hear About . . .

1. The	2. Butcher	3. who	4. backed	5. into	6. his	7. meat	8. grinder
9. and	10. got	11. a	12. little	13. behind	14. in	15. his	16. work ?

Factor the expression. Write the word under the answer in the box containing the exercise number.

## Answers 1-8

$(x^2 + 7)(x - 4)$ INTO
$(a^2 - 14)(3a + 10)$ SCALE
$(a^2 + 8)(3a + 1)$ BUTCHER
$(2a - 9)(a + 15)$ WEIGHED
$(3a^2 - 5)(6a + 11)$ HIS
$(x - 5)(x^2 + 4)$ WHO
$(a + 8)(x + 1)(x - 1)$ BEEF
$(x^2 + 2)(x - 5)$ THE
$(a^2 - 14)(3a - 10)$ GRINDER
$(a^2 + 8)(3a - 1)$ COW
$(2a - 9)(a^2 - 15)$ BACKED
$(3a^2 - 5)(11a + 6)$ SOME
$(a + 8)(x^2 + 1)$ MEAT

- $x^2(x-5) + 2(x-5)$   
 $(x-5)(x^2+2)$
- $a^2(3a+1) + 8(3a+1)$   
 $(3a+1)(a^2+8)$
- $x(x^2+4) - 5(x^2+4)$   
 $(x^2+4)(x-5)$
- $2a(a^2-15) - 9(a^2-15)$   
 $(a^2-15)(2a-9)$
- $x^2(x-4) + 7(x-4)$   
 $(x-4)(x^2+7)$
- $3a^2(6a+11) - 5(6a+11)$   
 $(6a+11)(3a^2-5)$
- $a(x^2+1) + 8(x^2+1)$   
 $(x^2+1)(a+8)$
- $(3a-10)a^2 - (3a-10)14$   
 $(3a-10)(a^2-14)$
- $w^2(5w-2) + (5w-2)$   
 $(5w-2)(w^2+1)$
- $7t(t^2+8) - 1(t^2+8)$   
 $(t^2+8)(7t-1)$
- $6w^2(13+6w) + (13+6w)$   
 $(13+6w)(6w^2+1)$
- $3t(t^2-9) + 2(t^2-9)$   
 $(t^2-9)(3t+2) = (t+3)(t-3)(3t+2)$
- $(8w+5)10 - (8w+5)3t$   
 $(8w+5)(10-3t)$
- $4t^2(t^3+1) - 25(t^3+1)$   
 $(t^3+1)(4t^2-25) = (t^3+1)(2t-5)(2t+5)$
- $7w(t^2-w^2) + 20(t^2-w^2)$   
 $(t^2-w^2)(7w+20) = (t+w)(t-w)(7w+20)$
- $t^2(64-t^2) - (64-t^2)$   
 $(64-t^2)(t^2-1) = (8-t)(8+t)(t+1)(t-1)$

## Answers 9-16

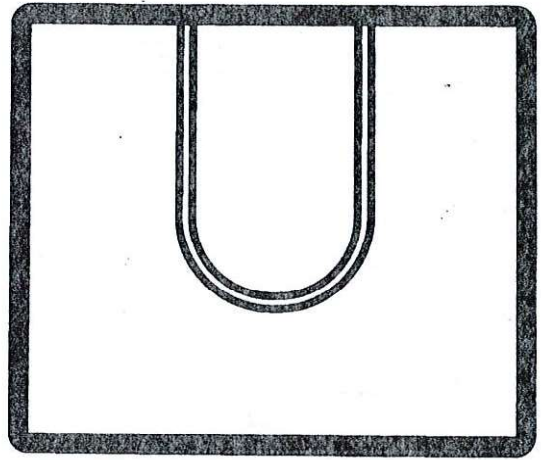
$(3t + 2)(t - 3)^2$ GROUND
$(6w^2 + 1)(13 + 6w)$ A
$(7w + 20)(t + w)(t - w)$ HIS
$(w^2 + 1)(5w - 2)$ AND
$(7t - 1)(t^2 - 2)$ CHOPPED
$(t + 1)(t - 1)(8 + t)(8 - t)$ WORK
$(3t + 2)(t + 3)(t - 3)$ LITTLE
$(t^3 + 1)(2t + 5)(2t - 5)$ IN
$(10 + 3t^2)(8w - 5)$ BEEF
$(7t - 1)(t^2 + 8)$ GOT
$(t^2 - 8)(t + 1)(t - 1)$ PORK
$(10 - 3t^2)(8w + 5)$ BEHIND
$(7w + 20)(t + w)^2$ CHOP

Factoring Polynomials:  
Factoring Polynomials Whose Terms Contain a Common Binomial Factor



# What Is The Title of This Picture?

Factor the expression, then find your answer. Each time the exercise number appears in the code, write the letter of the answer above it. If the answer has a ●, leave the space blank.



Title: Fire Pole Used  
 12 5 14 1 11 9 6 13 1 4 7 10 1 3  
eor false ALARMS  
 12 6 14 4 12 2 13 10 1 11 2 13 2 14 8 10

## answers 1-7

- G  $(n^2 + 8)(n + 6)$
- 5 ● I  $(n^2 - 6)(n + 1)$
- 1 ● E  $(n^2 + 3)(n + 4)$
- K  $(2n^2 + 3)(5n - 2)$
- 7 ● U  $(9n^2 + 1)(10n - 3)$
- T  $(2n^2 - 3)(7n + 2)$
- 2 ● A  $(n^2 + 8)(n - 3)$
- W  $(n^2 + 6)(n - 1)$
- 4 ● ●  $(7n^2 + 4)(2n - 11)$
- 6 ● O  $(4n^2 - 3)(7n + 2)$
- V  $(7n^2 + 4)(2n - 15)$
- J  $(9n^2 + 1)(10n + 3)$
- 3 ● D  $(2n^2 + 3)(5n + 2)$

Factoring Polynomials:  
 Factoring Polynomials by Grouping

## answers 8-14

- 1  $(n^3 + 4n^2)(+ 3n + 12)$   $(n+4)(n^2+3)$
- 2  $(n^3 - 3n^2)(+ 8n - 24)$   $n^2(n-3)+3(n-3)$
- 3  $(10n^3 + 4n^2)(+ 15n + 6)$   $n^2(n-3)+8(n-3)$   $(n-3)(n^2+8)$
- 4  $(14n^3 - 77n^2)(+ 8n - 44)$   $2n^2(5n+2)+3(5n+2)$   $(5n+2)(2n^2+3)$
- 5  $(n^3 + n^2)(- 6n - 6)$   $7n^2(2n-11)+4(2n-11)$   $(2n-11)(7n^2+4)$
- 6  $(28n^3 + 8n^2)(- 21n - 6)$   $n^2(n+1)-6(n+1)$   $(n+1)(n^2-6)$
- 7  $(90n^3 - 27n^2)(+ 10n - 3)$   $4n^2(7n+2)-3(7n+2)$   $(7n+2)(4n^2-3)$
- 8  $(x^3 + 4x^2)(- 9x - 36)$   $9n^2(10n-3)+1(10n-3)$   $(10n-3)(9n^2+1)$
- 9  $(x^3 - 16x)(+ 10x^2 - 160)$   $x^2(x+4)-9(x+4)$   $(x+4)(x^2-9)$   $(x+4)(x-3)(x+3)$
- 10  $(10x^2 + 16x)(+ 5xy + 8y)$   $x(x^2-16)+10(x^2-16)$   $(x^2-16)(x+10)$   $(x+4)(x-4)(x+10)$
- 11  $(12x^3 - 21x^2)(+ 8xy - 14y)$   $2x(5x+8)+y(5x+8)$   $(5x+8)(2x+y)$
- 12  $(x^3 + x^2y)(+ xy^2 + y^3)$   $3x^2(4x-7)+2y(4x-7)$   $(4x-7)(3x^2+2y)$
- 13  $(2x^3 + 8x^2)(- 15x - 60)$   $x^2(x+y)+y^2(x+y)$   $(x+y)(x^2+y^2)$
- 14  $(20x^3 + 48x^2)(- 5x - 12)$   $4x^2(5x+12)-1(5x+12)$   $(5x+12)(4x^2-1)$

13.15  $(5x+12)(2x+1)(2x-1)$