



# Christmas Coordinates

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*Draw x-axis from 0 to 18 and y-axis from 0 to 26*

$(16 \div 2, \sqrt{121})$   $(35 \div 5, 6 \times 2)$   $(10 - 3, \sqrt{169})$   $(\sqrt{64}, \sqrt{196})$   
 $(5 + 5, 28 \div 2)$   $(33 \div 3, 21 - 8)$   $(4^2 - 5, 4 \times 3)$   $(\sqrt{16} + \sqrt{36}, 14 - 3)$   $(\sqrt{64}, \sqrt{121})$

$(\sqrt{25}, 4^2)$   $(60 \div 12, 2 \times 3^2)$   $(\sqrt{49}, \sqrt{324})$   $(56 \div 8, 5^2 - 3^2)$   $(100 \div 20, 4^2)$

$(\sqrt{121}, 2^4)$   $(44 \div 3, 54 \div 3)$   $(3^2 + 2^2, 6 \times 3)$   $(5 + 2^3, 2^4)$   $(7 + 4, 8 \div \frac{1}{2})$

$(2^3, 5^2 - 5)$   $(\frac{2}{3} \times 9, \frac{2}{3} \times 33)$   $(\sqrt{25}, 44 \div 2)$   $(3^2 - 2^2, 4^2 + 7)$   $(2^2, 32 - 9)$   
 $(\frac{1}{8} \times 32, 12 \div \frac{1}{2})$   $(\sqrt{9}, \sqrt{576})$   $(2^2 - 1, \frac{1}{2} \times 50)$   $(\frac{1}{4} \times 8, 5^2)$   $(6 - 4, 6^2 - 10)$   
 $(8 - 2^3, 5^2 + 1)$   $(16 - 4^2, 5^2)$   $(3^2 - 2^3, 4^2 + 3^2)$   $(11 \div 11, 6^2 - 12)$   $(2^3 \div 4, 48 \div 2)$   
 $(\sqrt{4}, 7^2 - 26)$   $(4^2 - 3^2 - 2^2, \frac{1}{4} \times 92)$   $(\frac{1}{8} \times 24, 2 \times 11)$   $(\sqrt{16}, \sqrt{484})$   $(2^2, \sqrt{441})$   
 $(\sqrt{25}, 4^2 + 5)$   $(3^2 - 2^2, \sqrt{400})$   $(\sqrt{36}, 2^4 + 4)$

$(\sqrt{169}, 5 \times 4)$   $(3^2 + 4, 4^2 + 5)$   $(7 \times 2, 6^2 - 15)$   $(\sqrt{196}, 30 - \sqrt{64})$   $(\sqrt{225}, \sqrt{484})$   
 $(\frac{1}{4} \times 60, \sqrt{529})$   $(\sqrt{256}, 5^2 - 2)$   $(4^2, 3 \times 8)$   $(4^2 + 1, \frac{1}{4} \times 96)$   $(12 + 5, 5^2)$   
 $(36 \div 2, 75 \div 3)$   $(2 \times 3^2, 3^3 - 1)$   $(2^4, 5^2 + 1)$   $(\sqrt{256}, \sqrt{625})$   $(\sqrt{225}, 5^2)$   
 $(6 + 3^2, \frac{2}{3} \times 36)$   $(\sqrt{196}, \sqrt{400} + \sqrt{16})$   $(\frac{2}{3} \times 21, \sqrt{81} + \sqrt{196})$   $(\sqrt{169}, 57 - 34)$   
 $(4^2 - 3, 2 \times \sqrt{121})$   $(\sqrt{144}, 91 - 69)$   $(\sqrt{100} + \sqrt{4}, 2^4 + 2^2)$   $(\sqrt{169}, 80 \div 2^2)$

$(\frac{1}{3} \times 15, \sqrt{81})$   $(\sqrt{25}, \sqrt{64})$   $(\frac{3}{8} \times 16, 2^3)$   $(72 \div 12, \sqrt{49})$   $(\frac{1}{4} \times 28, 4^2 - 3^2)$   
 $(2^3 - 1, 4^2 - \sqrt{100})$   $(3^2 + 2, 66 \div 11)$   $(\sqrt{121}, 63 \div 9)$   $(\frac{3}{4} \times 4^2, \sqrt{49})$   
 $(\sqrt{144}, \frac{1}{8} \times 4^3)$   $(\sqrt{169}, 4^2 - 2^3)$   $(5^2 - 12, 3^2)$

$(91 \div 13, 54 \div 6)$   $(\sqrt{64}, 2^3)$   $(\sqrt{100}, 56 \div 7)$   $(\sqrt{121}, \sqrt{81})$



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**x=3:**  $(2x+1, 3x-2)$   $(x^2-2, x+5)$   $(6x-7, 4x-4)$   $(4x-1, x+4)$   $(7x/3, 10-x)$

**a=2, b=3:**  $(a+2b, 5a)$   $(2b+1, 4b-1)$   $(3a+1, 4b)$   $(a^3, 4b+1)$   $(2a+2b, 5a+b)$   
 $(a^3+b, 6a)$   $(b^2+a, a^4-5)$   $(b^2+1, 2+2^3)$   $(2b+a, a+8)$

**x=2, y=4, z=5:**  $(2x+1, 2z+y)$   $(1+y, y^2)$   $(x+z, 4z-y)$   $(2z-3, 4z-3x)$   $(5y/2x, 4y-2)$

**r=2, s=3, t=6:**  $(r+s+t, r+2t)$   $(s^2+r, 3t-r)$   $(2t+1, 6s-r)$   $(2r+s+t, 7r)$   $(5r+1, 10r-t)$

**a=3, b=5, c=2, d=7:**  $(d-2c, 2b+c)$   $(10-d, 4b-d)$   $(a+c, 2b+a)$   $(d-c, 4a)$   $(b-c, 4a)$

**p=5, q=2, r=3:**  $(2p+r, 2qr)$   $(p+q+2r, 7q-1)$   $(pr, 10+r)$   $(4p-q-r, 6q)$   $(3p-q, 4r)$

**a=10, b=3, c=6:**  $(c/6, 2a-1)$   $(a-3b, 7b)$   $(c-b, 4c-b)$   $(c/2, a+b+c)$   
 $(a-b-c, 3c+1)$

**x=3, y=5, z=2:**  $(y-x, 3y+z)$   $(y-z, 6x)$   $(8z, 3y+x)$   $(4y-x, 4x+y)$   $(z^3/4, 6x-1)$

**a=5, b=2, c=9, d=4:**  $(c-b-d, 2c+1)$   $(a-b, 5a-d)$   $(c-b, 5a)$   $(b+d, 6d+1)$   $(d^2, 9b)$   
 $(\sqrt{c}, d^2+b)$   $(a+b, 6d-b)$   $(c-a+b, 2c+a-b)$   $(b^2+1, 5a-d)$   $(d-1, a^2-b-d)$

**Last bit, no working out required!:** (1,8) (1,11) (4,11) (4,10) (5,10) (5,9)  
(13,9) (13,10) (14,10) (14,11) (17,11) (17,8) (16,8) (16,7) (15,7) (15,6)  
(14,6) (14,5) (13,5) (13,4) (12,4) (12,3) (11,3) (11,2) (7,2) (7,3) (6,3) (6,4)  
(5,4) (5,5) (4,5) (4,6) (3,6) (3,7) (2,7) (2,8) (1,8) (1,11)