Brilliance Tuition Centre, Redbank Plains

MATHS WORKSHEETS- ALGEBRA- IDENTIFY THE H.C.F. AND FACTORISE

Identify the H.C.F. and factorise the following expressions. Write the answer in simplest form.

1	$12y^3 + 24y^6$	
2	$24x^2y^2 + 18\,x^2y\ + 54\,xy^2$	
3	$27xy^2\ + 36\,x^2y\ + 63\,xy$	
4	$6a^2b - 9ab^2 + 18ab$	
5	$x^2y^2 - x^2y\ - xy^2 + xy$	
6	$3x^2 + 6xy + 9xy^2$	
7	$2xy + 10xy^2$	
8	$3x^2 - 12x + 21$	
9	$15x^4 + 21x^3$	
10	$12x^2y\ + 60xy + 144xy^2$	
11	$10a^2b + 90ab^2 + 270ab + 50\,a^2b^2$	
12	$2xy^2 - 6\,x^2y - 8xy\ -4x^2y^2$	
13	$5xy + 20x^2y\ - 10xy^2 + 25x^2y^2$	
14	$-3y^2 + 21x^3y$	
15	$48m^2n - 4m^2 + 8mn^2$	
16	$-11xy\ + 33\,x^2y - 66\,x$	
17	$-6xy^2 - 60\,x^2y + 48xy\ -54x^2y^2$	
18	$5a^2b - 100ab^2$	
19	$25x^2 - 200x + 250$	
20	$9x^4 + 21x^3 + 3x^2\ 12x$	

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Answer Key:

1. Find the H.C.F. of all terms/expressions
2. Take out the H.C.F. and write outside the bracket
3. Divide each term/expression by H.C.F. and write the quotient inside the bracket.
4. H.C.F. should remain outside the bracket.

1 $12y^3(1 + 2y^3)$

2 $6xy\ (4\ xy + 3\ x + 9\ y)$

3 $9xy\ (3y + 4x + 7)$

4 $3ab\ (2a - 3b + 6)$

5 $xy(xy - x - y + 1)$

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

7 $2xy\ (1 + 5y)$

8 $3(x^2 - 4x + 7)$

9 $3x^3(5x + 7)$

10 $12xy(x^2y + 60xy + 144xy^2$

11 $10ab\ (a + 9b + 27 + 5ab)$

12 $2xy(y - 3x - 4 - 2xy)$

13 $5xy(1 + 4x - 2y + 5xy)$

14 $-3y\ (y - 7x^3)$

15 $4m\ (12mn - m + 2n^2)$

16 $-11\ x(y - 3xy + 6)$

17 $-6xy(y + 10x - 8 + 9xy)$

18 $5ab\ (a - 20b)$

19 $25\ (x^2 - 8x + 10)$

20 $3x\ (3x^3 + 7x^2 + x + 4)$