Year 8 factorising worksheet

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Name: _____ Date: _____

Question 1

Factorise fully $12x^2 - 8x$.

Answer: _____

Question 2

Factorise fully $15ab - 10b^2$.

Answer: _____

Question 3

Factorise $8y - 20$.

Answer: _____

Question 4

Factorise fully $9ab + 6a$.

Answer: _____

Question 5

Factorise:

(a) $6x + 18$

(b) $10a - 15$

Answer: _____

Question 6

Factorise fully:

(a) $14m - 21$

(b) $-6x - 9$ (take out a negative common factor)

(c) $12a + 18b - 6$

Answer: _____

Question 7

Copy and complete the table.

Factorised form	Expanded form
4(x + 3)	
	9x - 27
-5(a - 2)	
	15n + 10

Answer: _____

Year 8 factorising: answers and worked solutions

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Question 1

Key idea: Find the highest common factor (HCF) of all terms, write it outside the bracket, then divide each term by it.

1. Find the HCF of $12x^2$ and $8x$: the HCF of 12 and 8 is 4, and both terms share a factor of x, so HCF = 4x. 2. Divide each term by 4x: $12x^2 \div 4x = 3x$ and $8x \div 4x = 2$. 3. Write the factorised form: $4x(3x - 2)$. 4. Check by expanding: $4x(3x - 2) = 12x^2 - 8x$ ✓

Answer: $4x(3x - 2)$

Question 2

Key idea: Find the HCF of all terms, write it outside the bracket, then divide each term by it.

1. Find the HCF of $15ab$ and $10b^2$: the HCF of 15 and 10 is 5, and both terms share a factor of b, so HCF = 5b. 2. Divide each term by 5b: $15ab \div 5b = 3a$ and $10b^2 \div 5b = 2b$. 3. Write the factorised form: $5b(3a - 2b)$. 4. Check by expanding: $5b(3a - 2b) = 15ab - 10b^2$ ✓

Answer: $5b(3a - 2b)$

Question 3

Key idea: Take out the highest common factor, 4.

1. $8y = 4 \times 2y$ and $20 = 4 \times 5$ 2. $8y - 20 = 4(2y - 5)$

Answer: $4(2y - 5)$

Question 4

Key idea: The highest common factor includes both a number and a pronumeral.

1. The HCF of $9ab$ and $6a$ is $3a$ 2. $9ab + 6a = 3a(3b + 2)$

Answer: $3a(3b + 2)$

Question 5

Answer: (a) $6(x + 3)$ (b) $5(2a - 3)$

Question 6

Answer: (a) $7(2m - 3)$ (b) $-3(2x + 3)$ (c) $6(2a + 3b - 1)$

Question 7

Answer: 4x + 12; 9(x - 3); -5a + 10; 5(3n + 2)