

Name: Key

Date: _____

Greatest Common Factors Algebra 1 Homework

Skills

Find the Greatest Common Factor,

1. 56, 70

14

2. 35, 150

5

3. $10m^2, 15m^3$

$5m^2$

4. $8ab^2c, 12a^2bc, 16abc^2$

4abc

Find the Greatest Common Factor.

5. $4a, 4b$

4

6. a^2b^2, a^3b^3

a^2b^2

7. $12x^4y^3, 32x^3y, -24xy^2$

4xy

8. $8x, -11x^2, 16x^3$

x

Factor out the GCF in each of the following expressions.

9. $6x^2 + 36$

$6(x^2 + 6)$

10. $2y^3 - y^2 + y$

$y(2y^2 - y + 1)$

11. $4y^2 - 8y + 12$

$4(y^2 - 2y + 3)$

12. $4x^2 - 6x + 10$

$2(2x^2 - 3x + 5)$

13. $49b^2 - 7b^3$

$7b^2(7 - b)$

14. $y^6 + y^4 + y^2$

$y^2(y^4 + y^2 + 1)$

15. $8x^2 + 24x$

$8x(x + 3)$

16. $10x - 35$

$5(2x - 7)$

17. $6x^2 - 30x$

$6x(x - 5)$

18. $5x^2 + 15x - 20$

$5(x^2 + 3x - 4)$

19. $14x^2 - 49x$

$7x(2x-7)$

20. $27x^2 - 9x + 3$

$3(9x^2 - 3x + 1)$

21. $x^4 - x^2$

$x^2(x^2 - 1)$

22. $12y^2x + 15yx^2 - 6yx$

$3yx(4y + 5x - 2)$

Applications

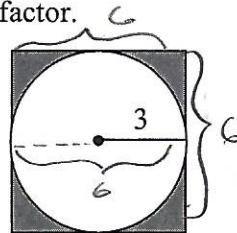
23. Which of the following expresses the shaded area below in terms of π ? Hint - Subtract the area of the circle from the area of the square, then factor.

(1) $9(1-\pi)$

(3) $6(6-\pi)$

(2) $9(4-\pi)$

(4) $3(2-\pi)$



$A_{OL} - A_{OS}$
 $5^2 - \pi r^2$
 $6^2 - \pi \cdot (3)^2$
 $36 - \pi \cdot 9$
 $36 - 9\pi$

$9(4-\pi)$

24. If the width of a rectangle is given by $3x$, then which of the following represents its length if the area of the rectangle is $12x^2 - 15x$?

(1) $4x-5$

(3) $12x^2 - 12x$

(2) $12x^2 - 18x$

(4) $9x - 12$

$A = L \cdot W$
 $\frac{12x^2 - 15x}{3x} = \frac{L \cdot (3x)}{3x}$
 $\frac{12x^2 - 15x}{3x} = L \rightarrow \text{OR } \frac{3x(4x-5)}{3x}$
 $4x - 5 = L$

Reasoning

25. Rachel and Jackie were both asked to find some factors of the same number. Rachel said the number contains the factors of 4 and 3. Jackie found that it contained 6 and 5. The original number could have been:

(1) 30

(2) 36

(3) 60

(4) 80

$1, 2, 3, 10, 15, 30$

$1, 3, 4, 5, 6$

3

26. Expressions can have GCF's that aren't just monomials. Consider the following two problems:

(a) Fill in the parentheses below.

$3x(x+2) + 7(x+2) = (3x+7)(x+2)$
 OR

$(x+2)(3x+7)$

(b) Write the following expression as the product of two binomials:

$2x(x-6) - 4(x-6) = (2x-4)(x-6)$

OR

$(x-6)(2x-4)$