9.1 Greatest Common Factor

NOTES

ALGEBRA

Write your questions here!

FACTOR =

GREATEST COMMON FACTOR =

Factor out a number	Factor out a variable	Factor out both
$6x + 9$	$3x^2 - 5x$	$8n^2 + 10n$
$3x^2 + 21x - 30$	$3p^4 + 15p^3 - 20p^2$	$12t^3 + 30t^2$

ZERO PRODUCT PROPERTY

Use zero product property to solve these factored equations!

$2(3x + 1) = 0$	$2x(3x + 1) = 0$	$4x(x - 4)(2x + 5) = 0$

Solve the following by factoring.

SUMMARY:

Now, summarize your notes here!

9.1 Greatest Common Factor

PRACTICE

Factor the following if possible.		
1. $12x - 15$	2. $4y^2 + 12y$	3. $7t^2 + 10t$
4. $5m^4 + 10m^2$	5. $x^2 - 9x$	6. $4x^2 - 10$
7. $7x + 12$	8. $3x^2 - 9x + 12$	9. $14x^3 + 7x^2 - 21x$
10. $8x^3 - 15x^2$	11. $5y^3 - 15y^2 + 3y$	12. $9n^2 - 15n$

Use the Zero Product Rule to solve the following factored equations.

13. $3x(x+5)=0$

14. $0=(x-2)(x+3)$

15. $2(x-1)=0$

16. $0=(2t+1)(t-7)$

17. $(3d-2)(2d+5)=0$

18. $0=5x(2x+7)(x-8)$

19. $4x(x+5)(2x-1)(4x+7)=0$

20. $0=2(r+3)(r-2)(3r+1)$

Solve the following by factoring.

21. $3x^2-12x=0$

22. $0=5x^2+25x$

23. $4a^2-10a=0$

24. $3x^2=9x$

Solve the following by factoring.

25. $15g + 6g^2 = 0$

26. $21y = 6y^2$

27. $8x^2 = 20x$

28. $0 = 4h + 2h^2 + 12h$

29. $3x^2 - 12x = 3x$

30. $2c^2 = 5c^2 + 18c$

Answer the following.

31. Simplify

$(3x^2 - 2x + 1) + (3x^2 - x + 5)$

32. Simplify $(3x - 2)(x + 5)$

33. Solve $3(x + 5) = 0$

34. Write the equation of the linear function.

x	0	2	4	6
$f(x)$	15	12	9	6

35. Write the equation of the exponential function.

x	0	1	2	3
$f(x)$	4	12	36	108

36. If $f(x) = 12 - 3x$, find $f(3) + 1$

WRAP UP

1. Factor $4x^3 - 10x^2 + 2x$

2. Solve $2x^2 = -18x$

3. Which of the following are possible dimensions for the rectangle shown below that has an Area of $3a^2 + 9a$. CIRCLE ALL THAT APPLY!

   (A) $l = 3,\ w = a^2 + 3a$

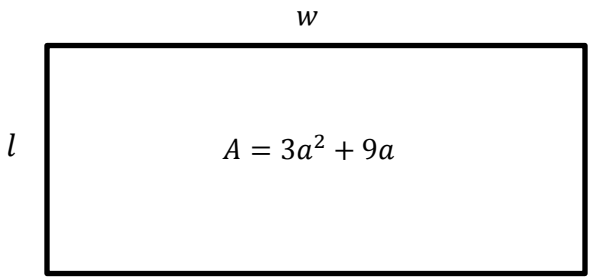
   (B) $l = 3,\ w = 3a^2 + a$

   (C) $l = 3a,\ w = a + 3$

   (D) $l = a,\ w = 3a + 9$

   (E) $l = 3a^2,\ w = a + 3$

   (F) $l = \frac{1}{2},\ w = 6a^2 + 18a$



4. Mr. Kelly sets off a bottle rocket from the ground. The height of the rocket over time is modeled by the function $h(t) = -16t^2 + 48t$, where *t* stands for time in seconds and the height off the rocket is measured in feet.

   a. Find $h(2)$. Use a sentence to explain what it means in this context.

   b. When will the rocket hit the ground?

EXIT TICKET –

Draw a square with side lengths of $2x$ units long. If the area of this square is $20x$ units^2, then find the value(s) of *x* ?