

5.2A Factoring Review#1 – 12: Factor out the greatest common factor (GCF) for each polynomial and write in *factored form*.

1. $2x + 6$

$2x$	$+ 6$
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Ans: $2(x+3)$

2. $3y - 9$

$3y$	$- 9$
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Ans: $3(y-3)$

3. $7a + 28$

$7a$	$+ 28$
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Ans: $7(a+4)$

4. $36z - 12$

$36z$	$- 12$
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Ans: ~~36~~ $12(3z-1)$

5. $b^2 + b$

b^2	$+ b$
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Ans: $b(b+1)$

6. $2r - r^2$

$2r$	$- r^2$
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Ans: $r(2-r)$

7. $9t^2 + t$

$9t^2$	$+ t$
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Ans: $t(9t+1)$

8. $4n^2 - 5n$

$4n^2$	$- 5n$
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Ans: $n(4n-5)$

9. $4h^2 + 12h$

$4h^2$	$+ 12h$
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Ans: ~~4~~ $h(h+3)$

10. $9x - 27x^2$

$9x$	$- 27x^2$
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Ans: $9x(1-3x)$

11. $2a^2 + 4a$

$2a^2$	$+ 4a$
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Ans: $2a(a+2)$

12. $20d^2 - 24d$

$20d^2$	$- 24d$
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Ans: $4d(5d-6)$

#13 – 27: Factor each polynomial.

13. $x^2 + 13x + 42$

Ans: $(x+7)(x+6)$

14. $x^2 + 6x + 9$

Ans: $(x+3)(x+3)$

15. $x^2 + 12x + 32$

Ans: $(x+8)(x+4)$

16. $x^2 + 3x - 10$

Ans: $(x+5)(x-2)$

17. $x^2 - 10x + 25$

Ans: $(x-5)(x-5)$

18. $x^2 - x - 12$

Ans: $(x-4)(x+3)$

19. $3x^2 + x - 4$

Ans: $(3x+4)(x-1)$

20. $2x^2 + 5x - 12$

Ans: $(2x-3)(x+4)$

21. $4x^2 - 12x + 9$

Ans: $(2x-3)(2x-3)$

5.2A Factoring Review

#13 – 27 (continued): Factor each polynomial.

22. $12x^2 - 8x + 1$

23. $2x^2 - 8x - 10$

24. $3x^2 + 21x + 18$

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

$3(x^2 + 7x + 6)$

Ans: $(6x-1)(2x-1)$

Ans: $2(x+1)(x-5)$

Ans: $3(x+1)(x+6)$

25. $a^2 - 9$

26. $x^2 - 16$

27. $25x^2 - 36$

Ans: $(a+3)(a-3)$

Ans: $(x+4)(x-4)$

Ans: $(5x+6)(5x-6)$

#28-29: The following quadratic functions are written in *standard form*. Convert them to *factored form*.

28. $y = x^2 + 3x + 2$

29. $y = x^2 - 49$

$y = (x+1)(x+2)$

$y = (x+7)(x-7)$

30. Why is *factored form* of a quadratic function also called *intercept form*?

x-intercepts have a y-coordinate of 0. Setting $y=0$ and easily solving for x gives the solution(s), which are the x -intercept(s).

#31 – 32: Convert the following quadratic functions to *factored form* and identify the x -intercepts.

31. $y = x^2 - 24x + 80$

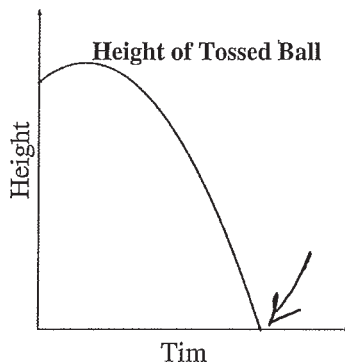
32. $y = x^2 + 9x - 10$

$0 = (x-4)(x-20)$

$0 = (x-1)(x+10)$

 x -intercepts: 4 and 20 x -intercepts: 1 and -10

33. The parabola graphed below shows the height of a ball tossed into the air.



a) Draw an arrow to the location of the graph that would represent when the ball hits the ground?

b) Explain why you placed the arrow at that location.

 $y=0$ means the ground level.

Section 5.2A