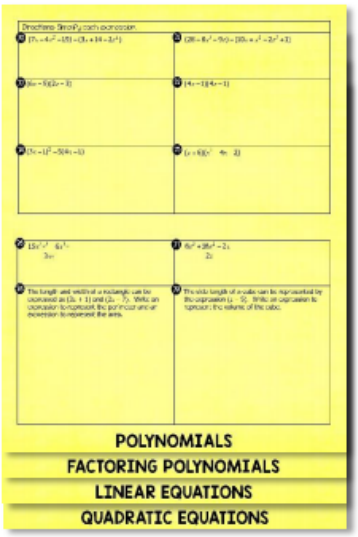
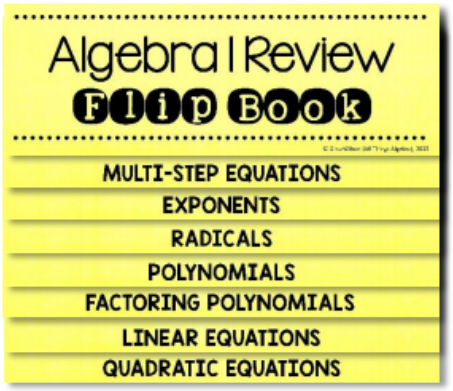
Algebra I Review
Flip Book

ACT Prep:

1. Khan Academy (SAT prep)
2. Flipbook reviews
3. Practice Tests

Once Printed: Layer the pages as shown below. Flip the top over, then staple.





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

2 $-\frac{3}{4}(16x+8)=19-(10x-3)$

3 $\frac{5x-18-(x+9)}{2}=3-4x$

4 $\frac{4x+1}{7}=\frac{2x-1}{3}$

MULTI-STEP EQUATIONS

PRODUCT RULE	POWER RULE	QUOTIENT RULE	NEGATIVE EXPONENTS	ZERO EXPONENT
$x^a \cdot x^b =$	$(x^a)^b =$	$\frac{x^a}{x^b} =$	$x^{-a} =$	$x^0 =$
When adding or subtracting expressions with exponents, simply combine like terms!				

5 $-5x^3 \cdot 4x^4$

6 $(-2m^3n)^2 \cdot 7mn^4$

1 $\frac{52c^{12}}{4c^2} - 2c^7 \cdot 4c^3$

8 $\frac{10w \cdot 2w^2}{24w^8}$

9 $(-3a^2b^3)^6 - 25a^{12}b^{18}$

10 $(9m^{-4})^2 \cdot \frac{1}{3}m^6$

11 $\frac{4x^5}{x^2} \cdot \left(\frac{x^1}{x^2}\right)^3$

EXPONENTS

Directions: Simplify each expression. Write all irrational answers in simplest radical form.

12. $\sqrt{49}$

13. $\sqrt{361}$

14. $\sqrt{\frac{1}{16}}$

15. $\sqrt{80}$

16. $2\sqrt{360}$

17. $\sqrt{243}$

18. $4\sqrt{384}$

19. $\sqrt{6} \cdot \sqrt{30}$

20. $3\sqrt{8} \cdot 5\sqrt{50}$

21. $\frac{\sqrt{112}}{\sqrt{4}}$

22. $\frac{6\sqrt{120}}{\sqrt{15}}$

23. $\frac{\sqrt{3}}{\sqrt{8}}$

24. $\sqrt{10} + \sqrt{10}$

25. $3\sqrt{50} + \sqrt{98}$

26. $\sqrt{63} + 4\sqrt{20} - \sqrt{7}$

27. $\sqrt[3]{8}$

28. $\sqrt[3]{125}$

29. $\sqrt[3]{\frac{27}{512}}$

RADICALS

Directions: Simplify each expression.

30 $(7x - 4x^2 - 19) + (3x + 14 - 2x^2)$

31 $(28 + 8w^3 - 9w) - (10w + w^2 - 2w^3 + 1)$

32 $(6k - 5)(2k - 3)$

33 $(4x - 1)(4x + 1)$

34 $(3x + 1)^2 - 5(4x - 1)$

35 $(a + 6)(a^2 - 4a + 2)$

36 $\dfrac{15x^7y^2 - 6x^3y}{3xy}$

37 $\dfrac{8k^3 + 18k^2 - 2k}{-2k}$

38 The length and width of a rectangle can be expressed as $(3x + 1)$ and $(2x - 7)$. Write an expression to represent the perimeter and an expression to represent the area.

39 The side length of a cube can be represented by the expression $(x - 5)$. Write an expression to represent the volume of the cube.

POLYNOMIALS

GCF	DIFFERENCE OF SQUARES	BASIC TRINOMIAL	SLIP & SLIDE TRINOMIAL
Polynomials that can't be factored at all are called _____			

Directions: Factor each polynomial completely.

40 $28w+12$	41 a^3b-3a^2b	42 $36x^5y^3z-54xy^2$
43 $9m^2-49$	44 $5x^2-80$	45 $3y-75x^2y$

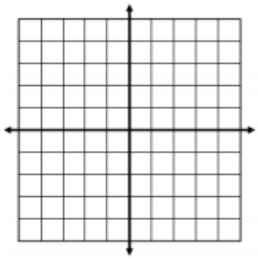
46 $x^2+16x+63$	47 $n^2-3n-70$	48 $c^2-13c-48$
49 $5x^2+5x-60$	50 $2p^2-24p+72$	51 $-x^2-11x-30$
52 $2m^2-13m+6$	53 $6k^2+31k+18$	54 $4h^2-20h+25$

FACTORING POLYNOMIALS

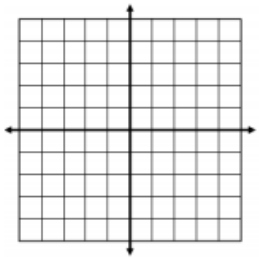
SLOPE-INTERCEPT FORM	STANDARD FORM	SLOPE FORMULA	POINT-SLOPE FORMULA

Directions: Graph each equation below

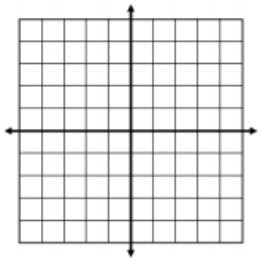
55 $y = -\frac{4}{3}x + 2$



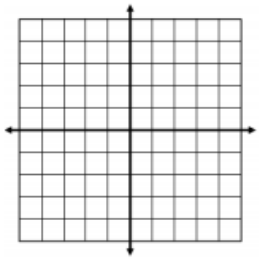
56 $x - 2y = 6$



57 $y = -4$



58 $x = 1$



Directions: Find the slope of the line passing through the given points.

59 (-4, -9) and (2, 6)

60 (-10, 6) and (-3, -1)

61 (3, -2) and (-1, -2)

62 (5, -4) and (5, 8)

Directions: For questions 60-61, write the equation of the line in slope-intercept form using the given information.

63 passes through (-6, 1); slope = 1/4

64 passes through (-2, 13) and (2, -7)

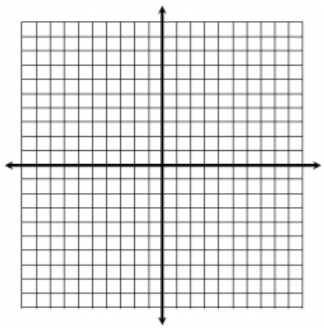
65 Give an example of a line that is parallel and a line that is perpendicular to the line $x + 3y = 10$.

LINEAR EQUATIONS

STANDARD FORM OF A QUADRATIC EQUATION: _____

Directions: Graph each equation below. Give the axis of symmetry, vertex, domain, range, and zeros.

66 $y = x^2 + 10x + 21$



Axis of Symmetry: _____

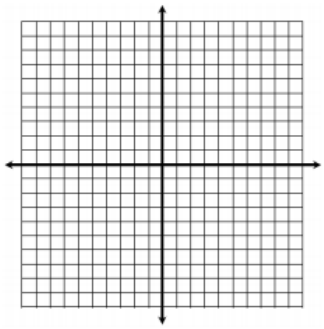
Vertex: _____

Domain: _____

Range: _____

Zeros: _____

61 $y = -2x^2 - 4x - 2$



Axis of Symmetry: _____

Vertex: _____

Domain: _____

Range: _____

Zeros: _____

Directions: Solve each equation by factoring.

68 $x^2 + 9x = 70$

69 $x^2 - 14x + 60 = 11$

10 $3x^2 + 35 = 24x - 1$

11 $6x^2 = 7 - 11x$

12 $8x^2 - 2x = 0$

13 $7x^2 - 63 = 0$

QUADRATIC EQUATIONS