

Honors Pre-Calculus

Summer Work – Answers

FOIL Practice

1. $x^3 - 7x^2 + 3x - 21$
2. $x^3 - x^2 - 17x + 20$
3. $-2x^4 + 6x^3 + x - 3$
4. $-5x^2 + \frac{17}{2}x - 3$
5. $-x^2 + x\sqrt{2} + 4$

Factoring Practice

1. $(y - 10)(y - 2)$
2. $(4x - 5y)(4x + 5y)$
3. $(3z + 2)(4z - 3)$
4. $3p(3p + 5)(2p - 9)$
5. $6ab^2(2a + 7b)(3a - 5b)$

Rationalizing Radicals

1. $\frac{3\sqrt{6}}{2}$
2. $\frac{\sqrt{5}}{5}$
3. $2\sqrt{2}$
4. $-6 + 3\sqrt{5}$
5. $y\sqrt{x}$

Solving Systems

1. $(7, -10)$
2. $(8, -3)$
3. $(-4, 0)$
4. No Solution / Parallel Lines

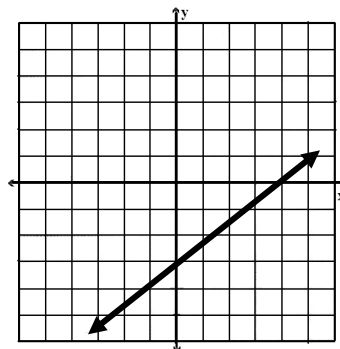
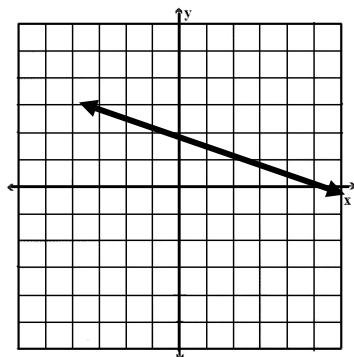
Simplifying Square Roots

1. $2\sqrt{31}$
2. $3\sqrt[3]{5}$
3. $2x\sqrt{5}$
4. 24
5. $-3\sqrt{2} + 3\sqrt{6}$

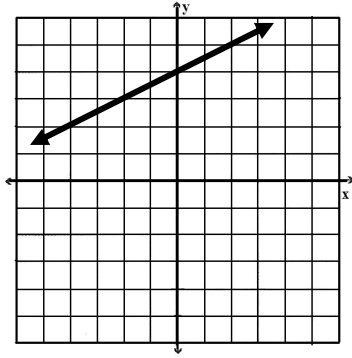
Linear Equations

1. $3y = 5$
2. $2x - 3y = -3$
3. already in standard form
4. $x - 7y = -34$
5. $y = -\frac{1}{2}x - 2$
6. $y = 4x$
7. $y = -\frac{2}{5}x + 2$

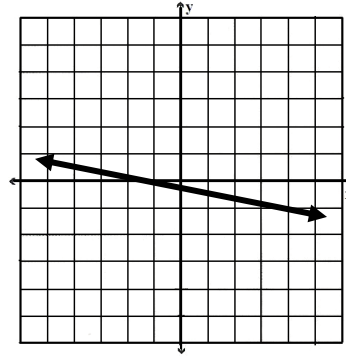
8. $Y = \frac{3}{4}x - 6$ (scale by 2's)



9. $y = 4 + \frac{1}{2}x$



10. $y = -\frac{1}{6}x - \frac{1}{3}$



Parallel and Perpendicular Lines

11. $y = \frac{1}{3}x + 8$

12. $y = -\frac{3}{2}x + 12$

Solving Linear Equations

a. $x = 1$

d. $x = 5 + 6y$

b. $x = \frac{5}{11}$

e. $x = \frac{5}{2}$

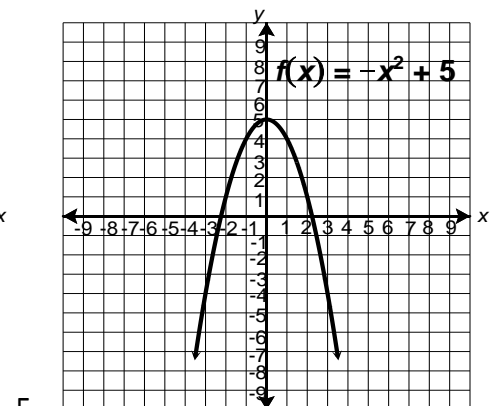
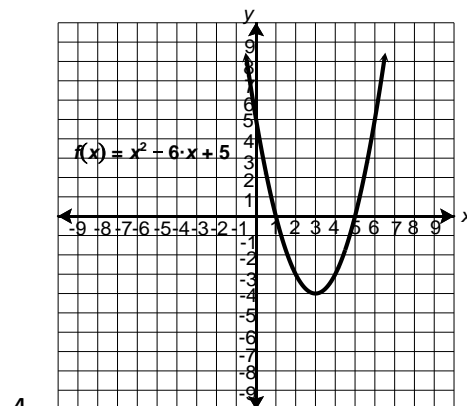
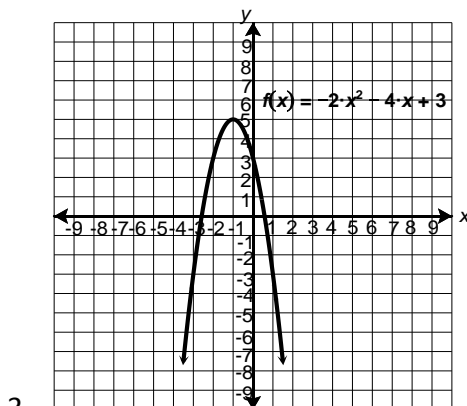
c. $x = my + p - t$

Quadratic Equations

1. $f(x) = 2x^2 - 4x - 3$

2. $f(x) = -x^2 - 4x - 1$

	Vertex	AoS	Opens	y-intercept
3.	(-1, 5)	$x = -1$	Down	(0, 3)
4.	(3, -4)	$x = 3$	Up	(0, 5)
5.	(0, 5)	$x = 0$	Down	(0, 5)



Solving Quadratic Equations

1. $x = \pm \frac{5}{4}$
2. $x = 5$
3. $\frac{5 \pm \sqrt{13}}{2}$
4. $x = -4, \frac{7}{2}$
5. $x = -\frac{1}{3}, \frac{5}{4}$
6. $\frac{-7 \pm \sqrt{57}}{4}$

Exponent Rules

1. $\frac{t^6}{3x^5y}$
2. $\frac{kp^5}{m^2}$
3. $2x^{\frac{7}{2}}$
4. $\frac{x^{\frac{7}{15}}}{2}$
5. $2x^{10}t^{\frac{11}{3}}$
6. $\frac{1}{2px^2}$

Fractions

- a. $\frac{9}{4}$
- b. $\frac{25x}{24}$
- c. 8
- d. $\frac{14q^2}{9}$
- e. t^2
- f. $\frac{x+4}{x+2}$

Manipulating Radicals

1. b
2. $5ab^3c\sqrt{2ab}$
3. $2z\sqrt[3]{b^2}$
4. $4a^2b^3$
5. $\frac{b\sqrt{b}}{a^2}$
6. $\sqrt[12]{a^6b^4c^3}$

Distance and Midpoint

- a. 8
- b. 17
- c. (2, 8.5)
- d. (6, 8.5)
- e. $-\frac{15}{8}$
- f. $-\frac{8}{15}$

Operations

- | | | |
|--------------------|--------------------------------------|-------------------------------------|
| 1. 39 | 8. 0.105 | 15. $\frac{5}{3}$ or $1\frac{2}{3}$ |
| 2. 28 | 9. $\frac{3}{55}$ | 16. $\frac{11}{20}$ |
| 3. 5 | 10. 66.56 | |
| 4. -20.2 | 11. $\frac{27}{5}$ or $5\frac{2}{5}$ | |
| 5. 0.3 | 12. -88.33 | |
| 6. $\frac{47}{80}$ | 13. 4.9 | |
| 7. 15 | 14. 2.7 | |