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. $-5x^2 + {}^{17}/_2 \, x - 3$

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. $(8, -3)$

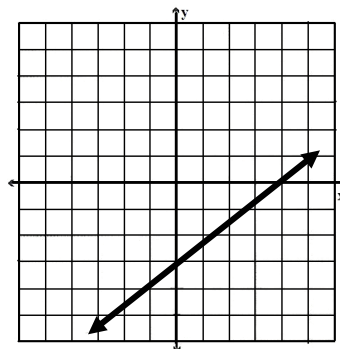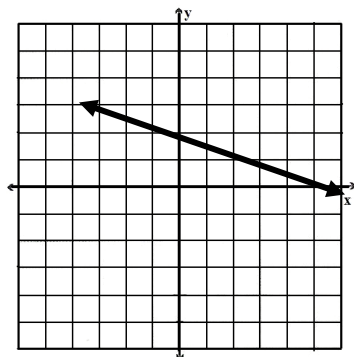3. $(-4, 0)$

4. No Solution / Parallel Lines

Simplifying Square Roots

1. $2\sqrt{31}$ 4. 24

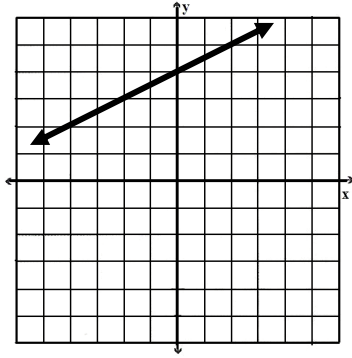2. $3\sqrt[3]{5}$ 5. $-3\sqrt{2} + 3\sqrt{6}$

3. $2x\sqrt{5}$

Linear Equations

1. $3y = 5$
2. $2x - 3y = -3$
3. already in standard form
4. $x - 7y = -34$
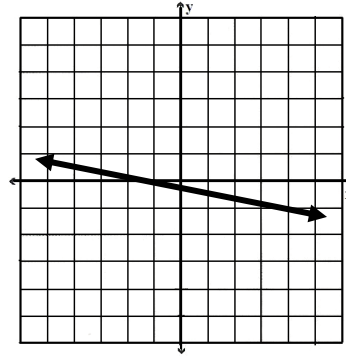5. $y = -\frac{1}{2}x - 2$
6. $y = 4x$
7. $y = -{}^{2}/_5 \, x + 2$

8. $Y = {}^{3}/_4 \, x - 6$ (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. $x = 5 + 6y$
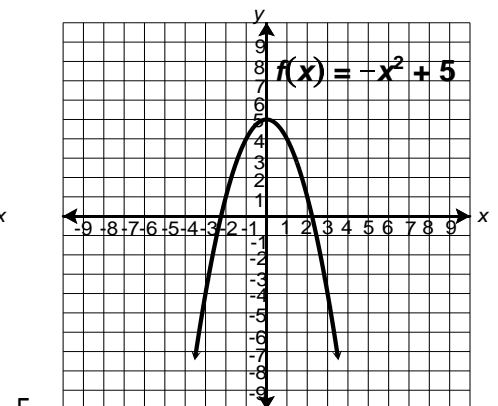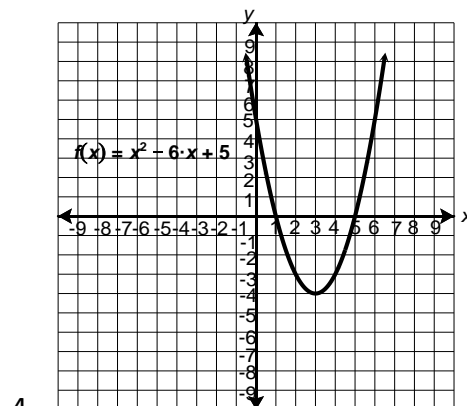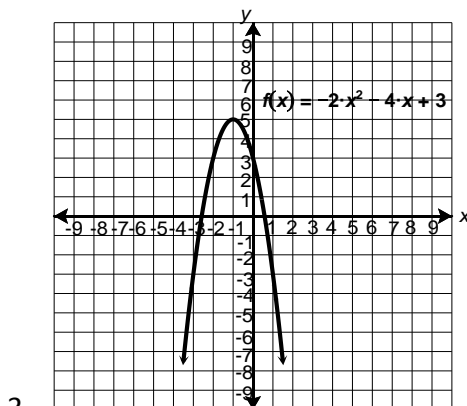
b. $x = \frac{5}{11}$

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

c. $x = my + p - t$

Quadratic Equations

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

2. 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)

3.

4.

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. $\frac{-7\pm\sqrt{57}}{4}$

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. $\sqrt[12]{a^6b^4c^3}$

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. $\frac{1}{2px^2}$

Distance and Midpoint

a. 8

b. 17

c. (2, 8.5)

d. (6, 8.5)

e. $-\frac{15}{8}$

f. $-\frac{8}{15}$

Fractions

a. $\frac{9}{4}$

b. $\frac{25x}{24}$

c. 8

d. $\frac{14q^2}{9}$

e. t^2

f. $\frac{x+4}{x+2}$

Operations

1. 39
2. 28
3. 5
4. -20.2
5. 0.3
6. $\frac{47}{80}$
7. 15

8. 0.105
9. $\frac{3}{55}$
10. 66.56
11. $\frac{27}{5}$ or $5\frac{2}{5}$
12. -88.33
13. 4.9
14. 2.7

15. $\frac{5}{3}$ or $1\frac{2}{3}$
16. $\frac{11}{20}$