

Summer Assignment - Part 1

Please submit this assignment to room 603 during Freshman Orientation or by August 1.

Directions:

Step 1: Print out and complete ALL Sections below.

Step 2: Using the included answer key, grade your work.

Step 3: Complete the Analysis Form to determine your strengths and weaknesses.

Step 4: Complete Summer Assignment - Part 2 for each identified weakness.

Step 5: Complete the Analysis Form.

Section 1: Quadratics

Factor each completely.

1) $x^2 - 4x$

2) $x^2 + 17x + 70$

3) $2x^2 - 10x - 28$

4) $3m^3 + 22m^2 - 16m$

5) $9n^3 - 64n$

6) $9n^2 - 33n + 28$

7) $6n^3 + 5n^2 - 6n$

8) $8x^2 - 30x - 27$

9) $8x^3 + 16x^2 - 90x$

10) $8m^3 + 24m^2 + 18m$

Solve each equation by factoring.

11) $16x^2 - 18x - 20 = 2x^2$

12) $11x^2 - 146x + 180 = -7x^2 - 8x$

Solve each equation by taking square roots.

13) $5x^2 - 4 = 16$

14) $64n^2 - 10 = -9$

15) $8m^2 + 2 = 234$

16) $5x^2 + 5 = 245$

Solve each equation by completing the square.

17) $p^2 + 18p + 9 = -3$

18) $b^2 - 10b - 4 = 3$

Solve each equation with the quadratic formula.

19) $6x^2 + x - 40 = 0$

20) $5a^2 - 2a - 2 = 0$

21) $10n^2 + 6n - 26 = -8$

22) $4n^2 - n - 136 = 2$

Section 2: Radical Expressions**List the first 30 perfect square numbers from memory:****Simplify.**

23) $\sqrt{20}$

24) $\sqrt{448}$

25) $2\sqrt{150x^2}$

26) $-7\sqrt{108m}$

27) $-3\sqrt{196m^2p^4q^2}$

28) $-5\sqrt{50x^3y^2z^4}$

Simplify.

29) $\sqrt{2x^3} \cdot 2\sqrt{2x^2}$

30) $\sqrt{15v^3} \cdot -3\sqrt{5v^3}$

31) $5\sqrt{3}(\sqrt{6} + 5x)$

32) $4\sqrt{5}(\sqrt{2} + 3x)$

33) $(-4\sqrt{3} + \sqrt{5})(2\sqrt{3} + \sqrt{5})$

34) $(4 + \sqrt{5r})(1 - 2\sqrt{5})$

35) $2\sqrt{2} - 4\sqrt{2}$

36) $-4\sqrt{3} + 4\sqrt{27}$

Section 3: Properties of Exponents

Simplify. Your answer should contain only positive exponents.

37) $2y \cdot 4y$

38) $3u^{-2}v^4 \cdot u^0$

39) $(3x^0y^{-1})^2$

40) $(2y)^{-4}$

41) $\frac{2x^2y^4}{4x^{-4}}$

42) $\frac{2x^{-2}y^3}{x^4}$

43) $\left(\frac{(2ab^{-4} \cdot a^{-3}b^0)^2}{(2b^2)^3}\right)^2$

44) $\left(\frac{x^3y^2}{2y^0 \cdot 2x^{-4}y^{-4}}\right)^3$

Answers to Summer Assignment - Part 1

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|---|---|--|-------------------------------------|
| 1) $x(x-4)$ | 2) $(x+7)(x+10)$ | 3) $2(x+2)(x-7)$ | 4) $m(3m-2)(m+8)$ |
| 5) $n(3n-8)(3n+8)$ | 6) $(3n-7)(3n-4)$ | 7) $n(2n+3)(3n-2)$ | 8) $(2x-9)(4x+3)$ |
| 9) $2x(2x+9)(2x-5)$ | 10) $2m(2m+3)^2$ | 11) $\left\{-\frac{5}{7}, 2\right\}$ | 12) $\left\{\frac{5}{3}, 6\right\}$ |
| 13) $\{2, -2\}$ | 14) $\left\{\frac{1}{8}, -\frac{1}{8}\right\}$ | 15) $\{\sqrt{29}, -\sqrt{29}\}$ | 16) $\{4\sqrt{3}, -4\sqrt{3}\}$ |
| 17) $\{-9 + \sqrt{69}, -9 - \sqrt{69}\}$ | 18) $\{5 + 4\sqrt{2}, 5 - 4\sqrt{2}\}$ | 19) $\left\{\frac{5}{2}, -\frac{8}{3}\right\}$ | |
| 20) $\left\{\frac{1 + \sqrt{11}}{5}, \frac{1 - \sqrt{11}}{5}\right\}$ | 21) $\left\{\frac{-3 + 3\sqrt{21}}{10}, \frac{-3 - 3\sqrt{21}}{10}\right\}$ | 22) $\left\{6, -\frac{23}{4}\right\}$ | |
| 23) $2\sqrt{5}$ | 24) $8\sqrt{7}$ | 25) $10x\sqrt{6}$ | 26) $-42\sqrt{3m}$ |
| 27) $-42p^2mq$ | 28) $-25z^2xy\sqrt{2x}$ | 29) $4x^2\sqrt{x}$ | 30) $-15v^3\sqrt{3}$ |
| 31) $15\sqrt{2} + 25x\sqrt{3}$ | 32) $4\sqrt{10} + 12x\sqrt{5}$ | 33) $-19 - 2\sqrt{15}$ | |
| 34) $4 - 8\sqrt{5} + \sqrt{5r} - 10\sqrt{r}$ | 35) $-2\sqrt{2}$ | 36) $8\sqrt{3}$ | |
| 37) $8y^2$ | 38) $\frac{3v^4}{u^2}$ | 39) $\frac{9}{y^2}$ | 40) $\frac{1}{16y^4}$ |
| 41) $\frac{x^6y^4}{2}$ | 42) $\frac{2y^3}{x^6}$ | 43) $\frac{1}{4b^{28}a^8}$ | 44) $\frac{x^{21}y^{18}}{64}$ |

Analysis of Part 1:

- After grading your work from part one, shade LIGHTLY each problem you did not solve correctly (for ANY reason.)
- Determine which areas are your strengths and your weaknesses. For each area of weakness, spend some time reviewing the concepts using the included links. Please note that the links will take you to a selection of concepts for that specific topic. Each video is approximately 5 minutes long... Choose to view only the ones that will help you show mastery of the content. For some concepts, you may only need to watch one or two videos, where with other concepts, you may need to watch many to “get” the concept.
- Register for DeltaMath online account at www.deltamath.com. (Select “Create Account” in upper right hand corner, then select “Student”. The Teacher Code is 813123. Enter the information requested, using your Cobb County Student ID (lunch number) when asked for Student ID. Select “Algebra II Summer Assignment” as your period from the drop-down menu at the top of this screen. Work through the sections that match each area of weakness.
- Move to Summer Assignment – Part 2. Only solve the problems from YOUR identified areas of weakness. There is an answer key for you to check your work. If you need additional practice in any of your identified areas of weakness, email Miss Kline at karen.kline@cobbk12.org asking for additional practice. Miss Kline will send you additional practice within a few days of your request, excluding the last week of June.

Section 1: Quadratic Expressions and Equations

Factor by GCF	1			
Factor x^2+bx+c	2			
Factor ax^2+bx+c	6	8		
Factor GCF and ax^2+bx+c	3	4	7	9
Factor Special Products	5		10	

Online Review Resources:

- [Factors and Greatest Common Factors](#)
- [Factoring \$x^2+bx+c\$](#)
- [Special Products of Polynomials](#)
- [Quadratic Equations and Functions](#)
- [Factoring \$ax^2+bx+c\$](#)
- [Factoring Special Products](#)

DeltaMath: Log in to www.deltamath.com and complete the Quadratic section(s), as needed.

Section 2: Radical Expressions

Simplify	23		24	
Simplify with variables	25	26	27	28
Multiply (Monomial x Monomial)	29		30	
Multiply (Monomial x Binomial)	31		32	
Multiply (Binomial x Binomial)	33		34	
Add/Subtract	35		36	

Online Review Resources:

- [Simplifying Radical Expressions](#)
- [Multiplying Polynomials](#)
- [Operations with Radical Expressions](#)

DeltaMath: Log in to www.deltamath.com & complete the Radical Expressions section(s), as needed.

Section 3: Properties of Exponents

37	38	39	40	41	42	43	44
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Online Review Resources: [Properties of Exponents](#)

DeltaMath: Log into www.deltamath.com and complete the Properties of Exponents section, as needed.

Areas of Strength:

Areas of Weakness:

After viewing the online resources and completing problems from section 2, complete the following:

1. After working through these materials, I now am confident in ...

Because...

2. I'm still not sure about ...

3. My goals for math this year are...

I plan to reach my goals by...

4. My biggest fear for math this year is...

I plan to overcome this by...

Summer Assignment - Part 2

Section 1: Quadratics**Factor each completely.**

1) $x^2 + 7x$

2) $x^2 + 19x + 90$

3) $5x^2 + 10x - 75$

4) $35m^2 - 40m + 5$

5) $9x^4 - 4x^2$

6) $9p^2 + 64p - 64$

7) $9n^3 - 54n^2 + 80n$

8) $10r^2 + 29r + 10$

9) $30r^2 - 63r + 27$

10) $36b^2 - 192b + 256$

Solve each equation by factoring.

11) $4p^2 - 75p + 56 = -4p - 4p^2$

12) $7v^2 - 7 = 48v$

Solve each equation by taking square roots.

13) $8x^2 - 10 = 118$

14) $-1 + 25m^2 = 80$

15) $2m^2 + 1 = 175$

16) $6x^2 + 8 = 602$

Solve each equation by completing the square.

17) $n^2 - 16n + 45 = -3$

18) $m^2 - 4m - 23 = 9$

Solve each equation with the quadratic formula.

19) $8m^2 + 3m - 2 = 0$

20) $8n^2 + 7n - 3 = 0$

21) $2r^2 + 7r - 16 = -12$

22) $6n^2 - 7n - 84 = 6$

Section 2: Radical Expressions**List the first 30 perfect square numbers from memory:****Simplify.**

23) $\sqrt{18}$

24) $\sqrt{245}$

25) $8\sqrt{16v^3}$

26) $3\sqrt{147n^3}$

27) $-5\sqrt{32a^3b^4}$

28) $5\sqrt{252m^2n^2}$

Simplify.

29) $3\sqrt{15k^3} \cdot -3\sqrt{15k}$

30) $\sqrt{15x^2} \cdot \sqrt{3x^2}$

31) $\sqrt{6n}(2 + \sqrt{6})$

32) $2\sqrt{6}(\sqrt{5} - \sqrt{2v})$

33) $(3\sqrt{3} - 4\sqrt{2})(\sqrt{3v} + \sqrt{2})$

34) $(-4 - 3\sqrt{3})(5 + \sqrt{3x})$

35) $-3\sqrt{63} + 2\sqrt{112}$

36) $3\sqrt{128} - 3\sqrt{8}$

Section 3: Properties of Exponents

Simplify. Your answer should contain only positive exponents.

37) $2ba^{-3} \cdot 2a^2b^0$

38) $4x^4 \cdot 3xy^0$

39) $(3y^0)^4$

40) $(3x^4y^{-2})^2$

41) $\frac{4yx^2}{x^0y^2}$

42) $\frac{uv^2}{2uv^0}$

43) $\frac{2x^0y^0 \cdot (2x^{-2}y^{-4})^3}{2x^4y^4}$

44) $\frac{u^0 \cdot 2uv}{(u^0v^0)^{-1}}$

Answers to Summer Assignment - Part 2

- | | | | |
|---|--|---|--------------------------------------|
| 1) $x(x+7)$ | 2) $(x+9)(x+10)$ | 3) $5(x-3)(x+5)$ | 4) $5(7m-1)(m-1)$ |
| 5) $x^2(3x-2)(3x+2)$ | 6) $(p+8)(9p-8)$ | 7) $n(3n-10)(3n-8)$ | 8) $(2r+5)(5r+2)$ |
| 9) $3(5r-3)(2r-3)$ | 10) $4(3b-8)^2$ | 11) $\left\{\frac{7}{8}, 8\right\}$ | 12) $\left\{-\frac{1}{7}, 7\right\}$ |
| 13) $\{4, -4\}$ | 14) $\left\{\frac{9}{5}, -\frac{9}{5}\right\}$ | 15) $\{\sqrt{87}, -\sqrt{87}\}$ | 16) $\{3\sqrt{11}, -3\sqrt{11}\}$ |
| 17) $\{12, 4\}$ | 18) $\{8, -4\}$ | 19) $\left\{\frac{-3 + \sqrt{73}}{16}, \frac{-3 - \sqrt{73}}{16}\right\}$ | |
| 20) $\left\{\frac{-7 + \sqrt{145}}{16}, \frac{-7 - \sqrt{145}}{16}\right\}$ | 21) $\left\{\frac{1}{2}, -4\right\}$ | 22) $\left\{\frac{9}{2}, -\frac{10}{3}\right\}$ | |
| 23) $3\sqrt{2}$ | 24) $7\sqrt{5}$ | 25) $32v\sqrt{v}$ | 26) $21n\sqrt{3n}$ |
| 27) $-20b^2a\sqrt{2a}$ | 28) $30mn\sqrt{7}$ | 29) $-135k^2$ | 30) $3x^2\sqrt{5}$ |
| 31) $2\sqrt{6n} + 6\sqrt{n}$ | 32) $2\sqrt{30} - 4\sqrt{3v}$ | 33) $9\sqrt{v} + 3\sqrt{6} - 4\sqrt{6v} - 8$ | |
| 34) $-20 - 4\sqrt{3x} - 15\sqrt{3} - 9\sqrt{x}$ | 35) $-\sqrt{7}$ | 36) $18\sqrt{2}$ | |
| 37) $\frac{4b}{a}$ | 38) $12x^5$ | 39) 81 | 40) $\frac{9x^8}{y^4}$ |
| 41) $\frac{4x^2}{y}$ | 42) $\frac{v^2}{2}$ | 43) $\frac{8}{x^{10}y^{16}}$ | 44) $2uv$ |