

## Today's Plan:

**Learning Target (standard):** I will review for my final exam.

**Students will:** Complete practice problems over previous concepts at the boards, put up homework problems on the board and make necessary corrections to their own work, and complete practice problems.

**Teacher will:** Provide practice problems over previous concepts, check homework problems for accuracy and provide students feedback, describe and provide examples of new concepts and assign students assessment problems over review concepts.

**Assessment:** Board work and review problems

**Differentiation:** Students will work at the board, go over and correct homework at their seats, actively engage in review problems for the final exam.

NAME \_\_\_\_\_

0:00:00

#160

**BELL RINGER**

1.) Find the slope between the points (3, 7) and (9, 8)

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{8 - 7}{9 - 3} = \frac{1}{6}$$

$$m = \frac{1}{6}$$

2.) Simplify  $2(x - 5) + 7$ 

$$2x - 10 + 7$$

$$2x - 3$$

3.) Is the table a linear or nonlinear function? Explain.

x	0	1	2	3
y	0	3	6	9

$$m_1 = \frac{3 - 0}{1 - 0} = 3$$

$$m = \frac{6 - 3}{2 - 1} = 3$$

$$m = \frac{9 - 6}{3 - 2} = 3$$

linear  
- same slopes

Semester Grade: [www.math4tigers.org](http://www.math4tigers.org)

$$.40Q_3 + .40Q_4 + .20exam = semester$$

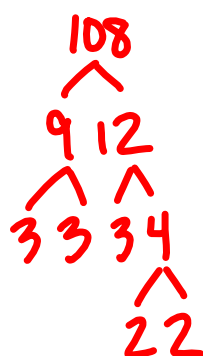
Simplify.

$$-3\sqrt{108} \cdot 2\sqrt{27}$$

$$= -6\sqrt{2 \cdot 2 \cdot 3 \cdot 3 \cdot 3 \cdot 3 \cdot 3 \cdot 3}$$

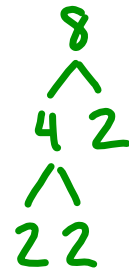
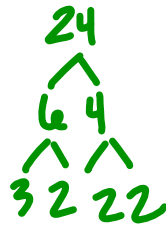
$$= -6 \cdot 2 \cdot 3 \cdot 3 \cdot 3$$

$$= -324$$



Simplify.

$$\sqrt{24ab^2} \cdot \sqrt{8a^3b^3}$$



$$= \sqrt{\underbrace{2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 3 \cdot a \cdot a \cdot a \cdot b \cdot b \cdot b \cdot b \cdot b}_{\text{prime factorization}}}$$

$$= 2 \cdot 2 \cdot 2 \cdot a \cdot a \cdot b \cdot b \sqrt{3b}$$

$$= 8a^2b^2\sqrt{3b}$$

Simplify.

$$(3\sqrt{10} + 4)(5\sqrt{2} + 3\sqrt{5})$$

$$\begin{array}{c} 10 \\ \wedge \\ 25 \end{array}$$

$$= 15\sqrt{2 \cdot 2 \cdot 5} + 9\sqrt{2 \cdot 5 \cdot 5}$$

$$= 15 \cdot 2\sqrt{5} + 9 \cdot 5\sqrt{2}$$

$$= \underline{30\sqrt{5}} + \underline{45\sqrt{2}} + \underline{20\sqrt{2}} + \underline{12\sqrt{5}}$$

$$= 42\sqrt{5} + 65\sqrt{2}$$

CP Algebra I

Name \_\_\_\_\_

## Final Exam Review

Factor the common factor out of each expression.

1)  $27k^6 + 45k + 45$

GCF: 9

$$9(3k^6 + 5k + 5)$$

2)  $12b^3 - 16b^2 + 36b$

GCF:  $4b$ 

$$4b(3b^2 - 4b + 9)$$

3)  $-5y^5x^2 + 20y^6x - 45y^5$

GCF:  $-5y^5$ 

$$-5x^2y^5 + 20xy^6 - 45y^5$$

$$-5y^5(x^2 - 4xy + 9)$$

4)  $-64x^2y^3 + 72xy^3 + 16xy^2$

GCF:  $-8xy^2$ 

$$-8xy^2(8xy - 9y - 2)$$

Factor each completely.

5)  $x^2 - 4x - 21$

$$\begin{array}{c} 21 \\ \wedge \\ 3 \quad -7 \\ \hline 3 - 7 = -4 \end{array}$$

$$\begin{array}{l} x^2 + 3x - 7x - 21 \\ x(x+3) - 7(x+3) \\ (x+3)(x-7) \end{array}$$

6)  $n^2 - 11n + 28$

$$\begin{array}{c} 28 \\ \wedge \\ -7 \quad 4 \\ \hline -7 + 4 = -11 \end{array}$$

$$\begin{array}{l} n^2 - 7n - 4n + 28 \\ n(n-7) - 4(n-7) \\ (n-7)(n-4) \end{array}$$

7)  $x^2 + 14x + 40$

$$\begin{array}{c} 40 \\ \wedge \\ 10 \quad 4 \\ \hline 10 + 4 = 14 \end{array}$$

$$\begin{array}{l} x^2 + 10x + 4x + 40 \\ x(x+10) + 4(x+10) \\ (x+10)(x+4) \end{array}$$

8)  $a^2 + 12a + 35$

$$\begin{array}{c} 35 \\ \wedge \\ 5 \quad 7 \\ \hline 5 + 7 = 12 \end{array}$$

$$\begin{array}{l} a^2 + 5a + 7a + 35 \\ a(a+5) + 7(a+5) \\ (a+5)(a+7) \end{array}$$

9)  $5x^2 + 4x$  GCF:  $x$   
 $x(5x+4)$

10)  $7r^2 - 6r$  GCF:  $r$   
 $r(7r-6)$

11)  $6k^2 - 25k + 14$   
 $\begin{array}{c} 84 \\ \swarrow \quad \searrow \\ -21 \quad +4 = -25 \end{array}$

$6k^2 - 21k - 4k + 14$   
 $3k(2k-7) - 2(2k-7)$   
 $(2k-7)(3k-2)$

12)  $4m^2 + 25m + 6$   
 $\begin{array}{c} 24 \\ \swarrow \quad \searrow \\ 24+1 = 25 \end{array}$

$4m^2 + 24m + m + 6$   
 $4m(m+6) + 1(m+6)$   
 $(m+6)(4m+1)$

13)  $30x^2 + 100x$  GCF:  $10x$   
 $10x(3x+10)$

14)  $20b^2 - 100b$  GCF:  $20b$   
 $20b(b-5)$

15)  $16n^2 - 25$   
 $(4n+5)(4n-5)$

16)  $9x^2 - 16$   
 $(3x+4)(3x-4)$



Factor each completely.

1)  $p^2 - 15p + 54$   
 $\begin{matrix} 54 \\ \swarrow \quad \searrow \\ -9 \quad +6 = -15 \end{matrix}$   
 $p^2 - 9p - 6p + 54$   
 $p(p-9) - 6(p-9)$   
 $(p-9)(p-6)$

2)  $x^2 + 11x + 30$   
 $\begin{matrix} 30 \\ \swarrow \quad \searrow \\ 6 \quad +5 = 11 \end{matrix}$   
 $x^2 + 6x + 5x + 30$   
 $x(x+6) + 5(x+6)$   
 $(x+6)(x+5)$

3)  $r^2 + 3r - 54$   
 $\begin{matrix} 54 \\ \swarrow \quad \searrow \\ 9 \quad -6 = 3 \end{matrix}$   
 $r^2 + 9r - 6r - 54$   
 $r(r+9) - 6(r+9)$   
 $(r+9)(r-6)$

4)  $p^2 + 4p - 45$   
 $\begin{matrix} 45 \\ \swarrow \quad \searrow \\ 9 \quad -5 = 4 \end{matrix}$   
 $p^2 + 9p - 5p - 45$   
 $p(p+9) - 5(p+9)$   
 $(p+9)(p-5)$

5)  $25p^2 - 16$   
 $(5p+4)(5p-4)$

6)  $9x^2 - 6x + 1$   
 $\begin{matrix} 9 \\ \swarrow \quad \searrow \\ -3 \quad +3 = -6 \end{matrix}$   
 $9x^2 - 3x - 3x + 1$   
 $3x(3x-1) - 1(3x-1)$   
 $(3x-1)^2 \leftarrow (3x-1)(3x-1)$

7)  $16x^2 - 25$   
 $(4x+5)(4x-5)$

8)  $7n^3 - 21n^2 - 6n + 18$   
 $7n^2(n-3) - 6(n-3)$   
 $(n-3)(7n^2-6)$

9)  $10x^3 + 2x^2 - 15x - 3$   
 $2x^2(5x+1) - 3(5x+1)$   
 $(5x+1)(2x^2-3)$

10)  $5x^3 + 5x^2 + 6x + 6$   
 $5x^2(x+1) + 6(x+1)$   
 $(x+1)(5x^2+6)$

11)  $5v^2 + 21v + 4$   
 $\begin{matrix} 20 \\ \swarrow \quad \searrow \\ 20 \quad +1 = 21 \end{matrix}$   
 $5v^2 + 20v + v + 4$   
 $5v(v+4) + 1(v+4)$   
 $(v+4)(5v+1)$

12)  $2x^2 - 9x$   
 $x(2x-9)$

13)  $2n^2 - 13n - 45$   
 $\begin{matrix} 90 \\ \swarrow \quad \searrow \\ 5 \quad -18 = -13 \end{matrix}$   
 $2n^2 + 5n - 18n - 45$   
 $n(2n+5) - 9(2n+5)$   
 $(2n+5)(n-9)$

14)  $7m^2 + 9m - 10$   
 $\begin{matrix} 70 \\ \swarrow \quad \searrow \\ 14 \quad -5 = 9 \end{matrix}$   
 $7m^2 + 14m - 5m - 10$   
 $7m(m+2) - 5(m+2)$   
 $(m+2)(7m-5)$