Honors Math II
Extra Credit Review

Name Key
Period_____ Date_____

Simplify.

1. $(-6m^3)(2m^4n^5)$

$-12m^7n^5$

2. $(-3x^4)^3$

$-27x^{12}$

3. $\left(\frac{3m^2}{n^4}\right)^3$ $\frac{27m^6}{n^{12}}$

4. $3\sqrt{7}\,(4\sqrt{2}-5\sqrt{3})$

$12\sqrt{14} - 15\sqrt{21}$

5. $\sqrt[6]{\sqrt[4]{2x}}$

$\sqrt[24]{2x}$ or $(2x)^{1/24}$

6. $\sqrt{2x}\cdot\sqrt[3]{2x}$

$(2x)^{1/2}\cdot(2x)^{1/3} = (2x)^{5/6}$

7. $\left(\frac{m^{10}}{n^5}\right)^{\frac{3}{5}}$ $\frac{m^6}{n^3}$

8. $(4u^2v^{10})^2(u^2v^3)^{-2}$

$\frac{16u^4v^{20}}{u^4v^6} = 16v^{14}$

9. $\sqrt[6]{\frac{x^{36}y^{42}}{z^{-12}}}$ $x^6y^7z^2$

Find the sum or difference.

10. $(\cancel{3m} - \cancel{3m^3}) + -(14 + \cancel{8m^3} - \cancel{5m^2} + \cancel{m})$

$5m^3 - 5m^2 + 4m - 14$

Find the product.

11. $(2n-3)(4n^2+2n-5)$

$8n^3 + 4n^2 - 10n$
$-12n^2 - 6n + 15$

$8n^3 - 8n^2 - 16n + 15$

12. $(4x+1)^2$ $(4x+1)(4x+1)$

$16x^2 + 4x + 4x + 1$

$16x^2 + 8x + 1$

Solve the equation for x.

13. $2x^2 - 10 = -30$
$+10 \quad +10$

$2x^2 = -20$ $x = \pm i\sqrt{10}$

$x^2 = -10$

Simplify.

14. $\sqrt{-125}$ $5i\sqrt{5}$

Simplify:

15. $\frac{2i}{3+2i}\,\frac{(3-2i)}{(3-2i)}$ $\frac{6i - 4i^2}{9 - 4i^2}$

$\frac{4+6i}{13}$

16. $(3-2i)(4+2i)$ $12 + 6i - 8i - 4i^2$

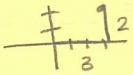
$12 - 2i + 4$

$16 - 2i$

Given: $z = 2 - i$ $\quad w = 3 + 2i$

Find:

17. $|w|$



$\sqrt{13}$

18. $2z + \overline{w}$

$2(2-i) + 3-2i$

$4-2i + 3-2i$

$7-4i$

19. $|3z - 2w|$

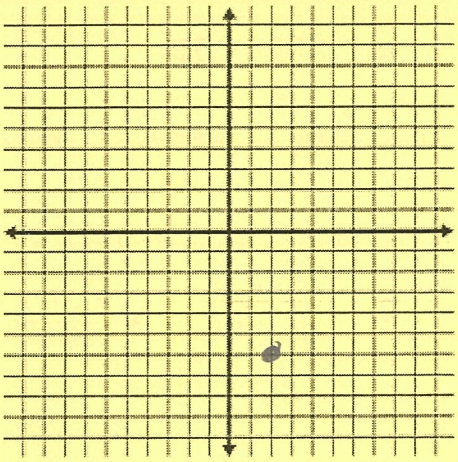
$3(2-i) - 2(3+2i)$

$6-3i - 6-4i$

$|-7i| = 7$

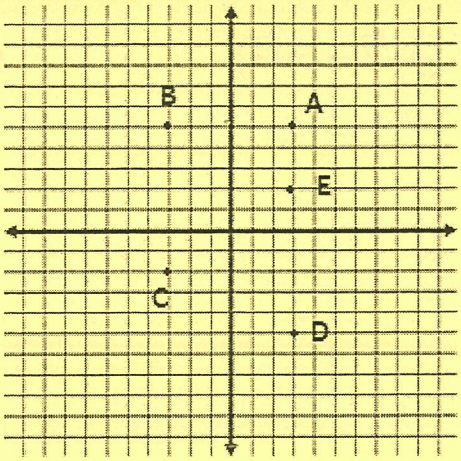
Graph the complex number.

20. $2 - 6i$



21. Which 2 points are conjugates?

A & D



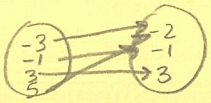
Identify the domain and range of the given relation. Then represent the relation using a graph and a mapping diagram.

22. (5, -2), (-3, -2), (3, 3), (-1, -1)

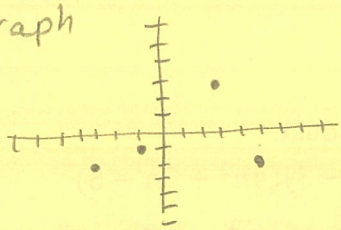
D: $\{-3, -1, 3, 5\}$

R: $\{-2, -1, 3\}$

Map



Graph

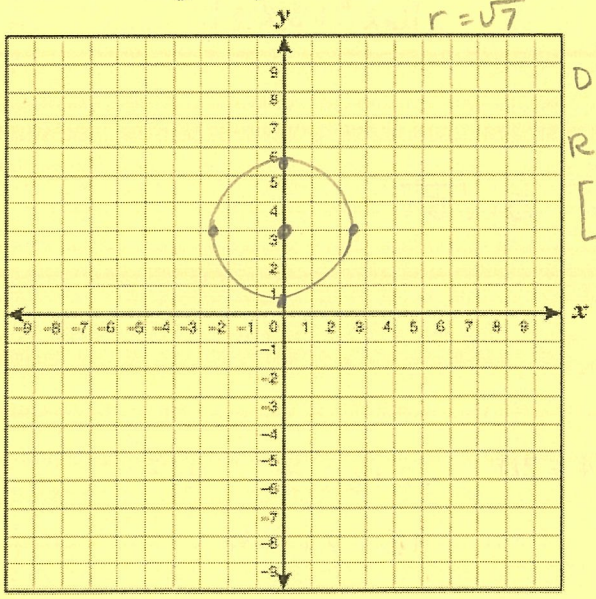


Graph the following equations and state the domain and range.

23. $x^2 + (y-3)^2 = 7$

C: $(0, 3)$

$r = \sqrt{7}$

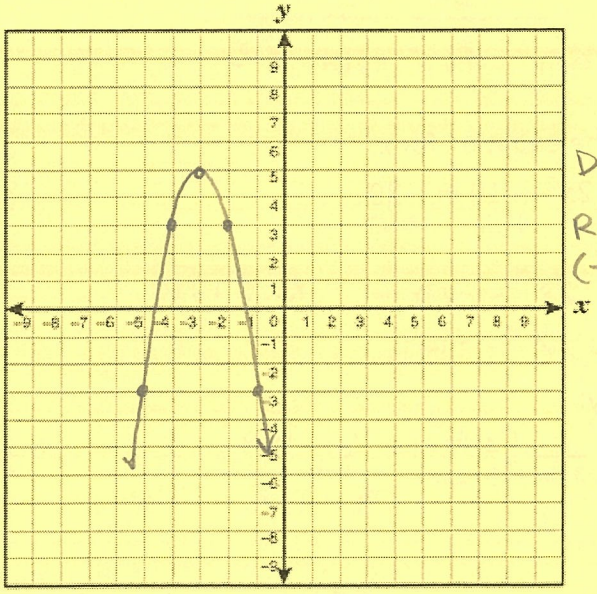


D: $[-\sqrt{7}, \sqrt{7}]$

R: $[3-\sqrt{7}, 3+\sqrt{7}]$

24. $y = -2(x+3)^2 + 5$

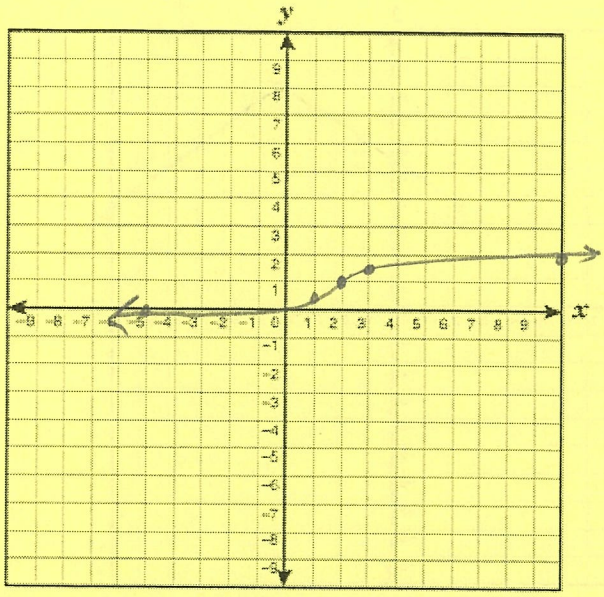
V: $(-3, 5)$



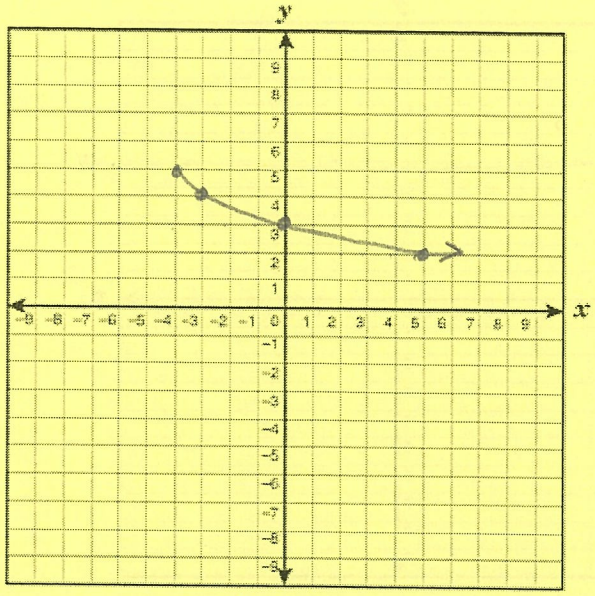
D: $\mathbb{R}$

R: $(-\infty, 5]$

25. $y = \frac{1}{2}\sqrt[3]{x-2} + 1$ (2,1)

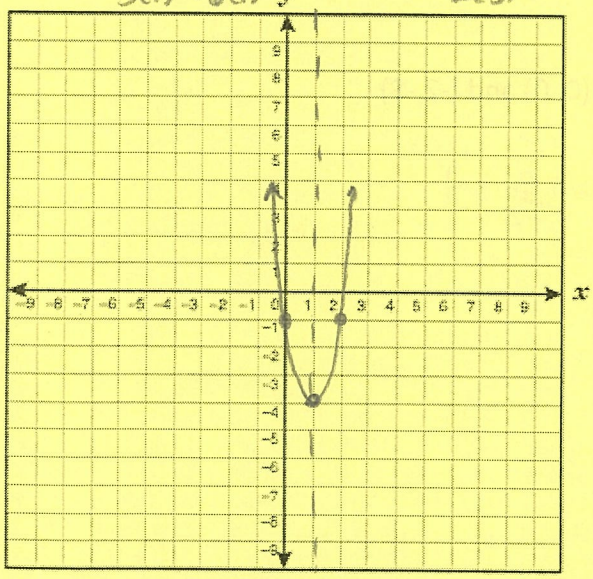


26. $y = -\sqrt{x+4} + 5$ (-4,5)



27. $y = 3x^2 - 6x - 1$ $x = \frac{6}{2(3)} = 1$

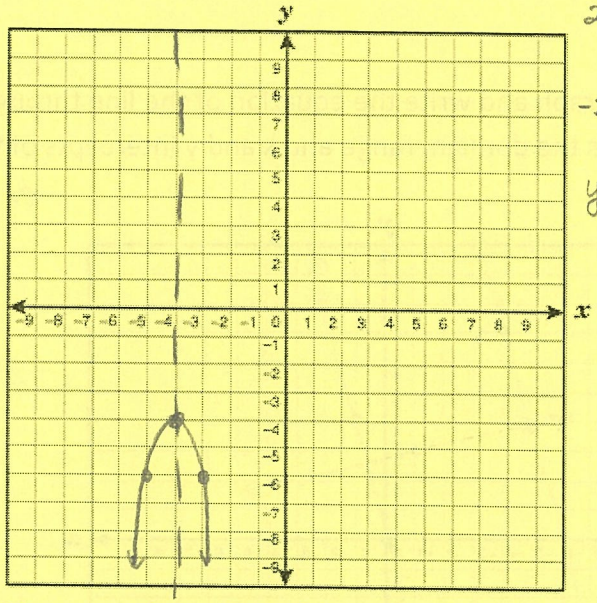
$3(1)^2 - 6(1) - 1$



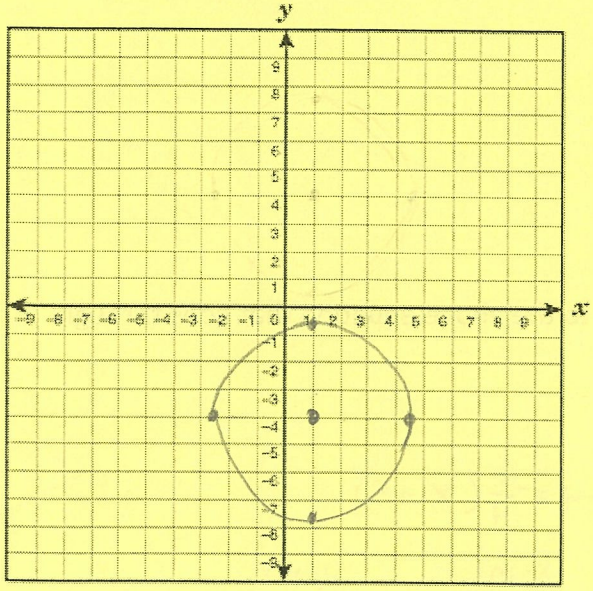
28. $y = -2x^2 - 16x - 36$ $x = \frac{16}{2(-2)} = -4$

$-2(-4)^2 - 16(-4) - 36$

$y = -4$



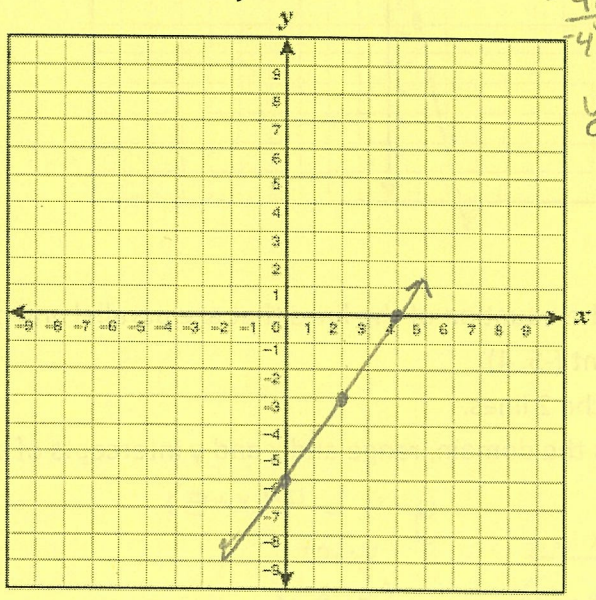
29. $(x-1)^2 + (y+4)^2 = 12$ (1,-4)



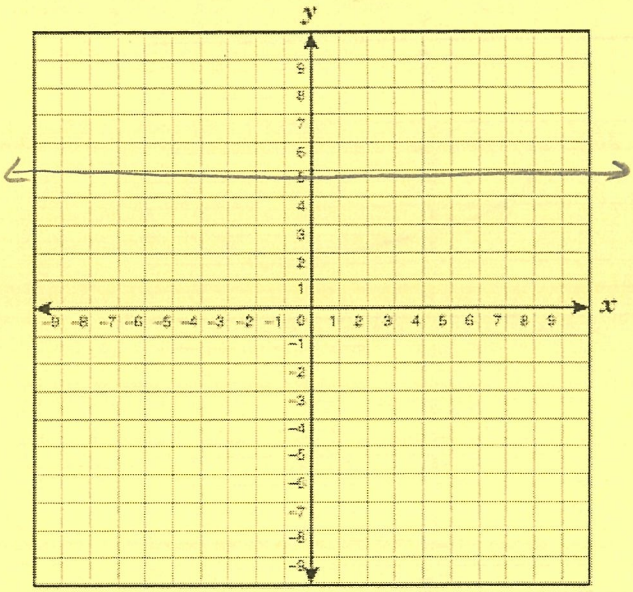
30. $6x - 4y = 24$

$\frac{-4y}{-4} = \frac{-6x}{-4} + \frac{24}{-4}$

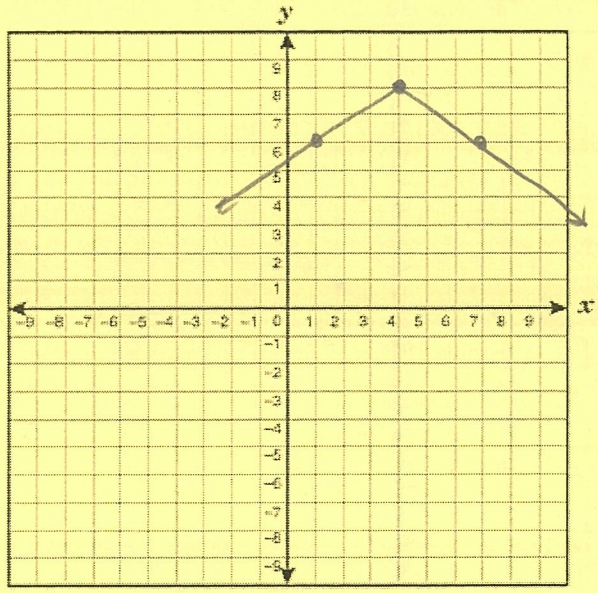
$y = \frac{3}{2}x - 6$



31. $y = 5$



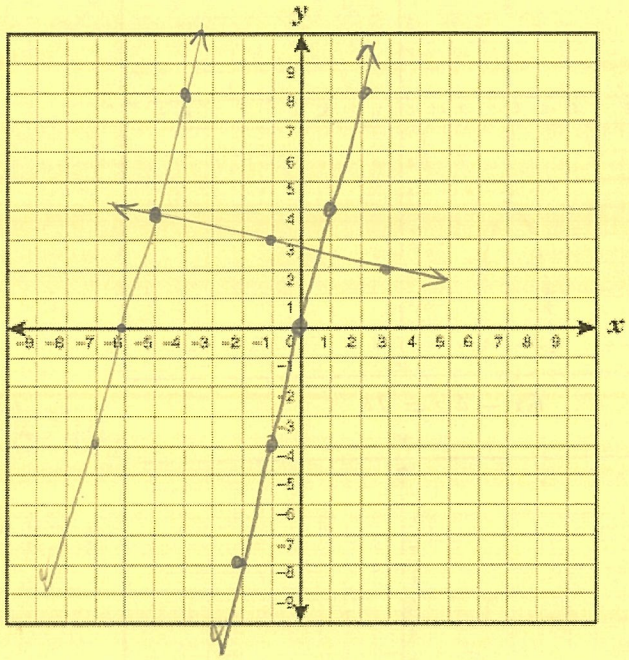
32. $y = -\frac{2}{3}|x - 4| + 8$



(4, 8)

21. Graph and write the equation of the line through the points (0, 0) and (-2,-8).
What is the domain, range and x and y intercepts of the line?

$m = \frac{-8-0}{-2-0} = \frac{-8}{-2} = 4$



Write the equation of the lines that are parallel and perpendicular to the above equation that goes through the point (-5, 4).
Graph the 2 lines.
What is the domain, range and x and y intercepts of the 2 lines?

$y - 4 = 4(x+5)$

x-int
(-6, 0)

y-int
(0, 24)

$y - 4 = -\frac{1}{4}(x+5)$

x-int
$0 - 4 = -1/4x - 5/4$

y-int
(0, 11/4)