Name: KEY

ID: A

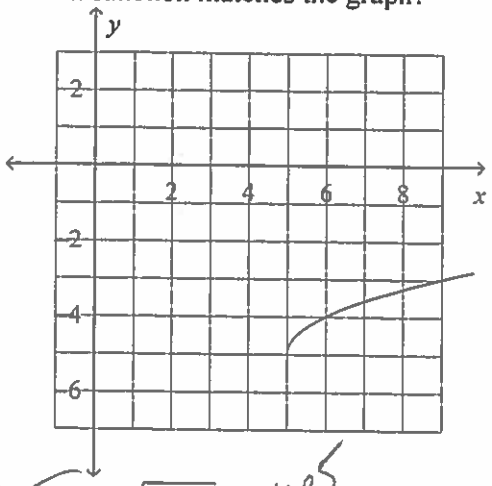
Chpt 7

~~1st Semester Notes~~ Exam Practice

Multiple Choice

b

1 Which function matches the graph?



right 5
down 5

a) $y = \sqrt{x+5} + 5$ up 5

b) $y = \sqrt{x-5} - 5$ rights downs

c) $y = \sqrt{x+5} - 5$

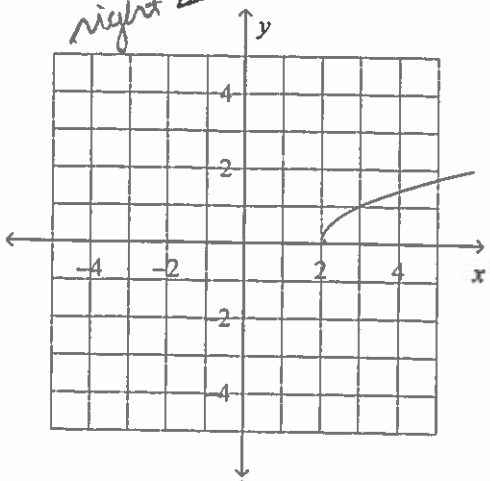
~~d)~~ $y = \sqrt{x-5} + 5$

a)

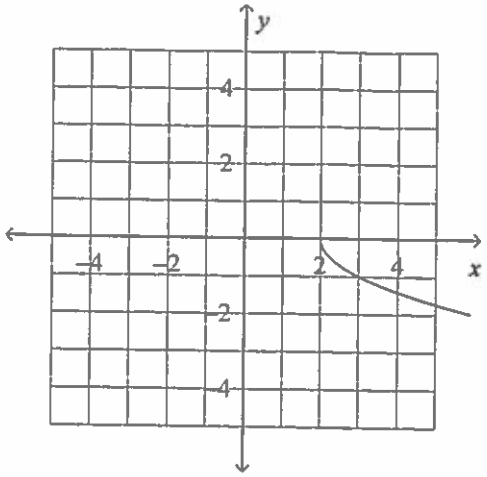
2 **Graph the function.**

$y = \sqrt{x - 2}$ right 2

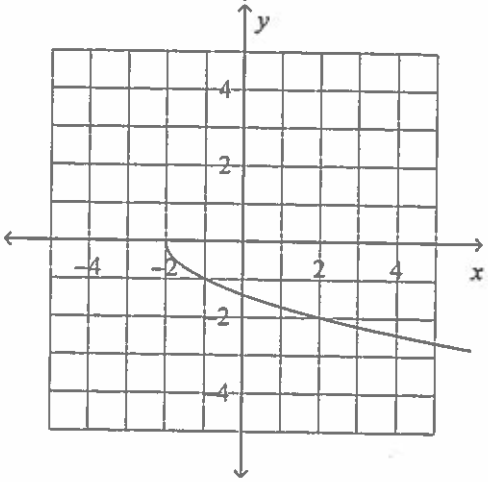
a)



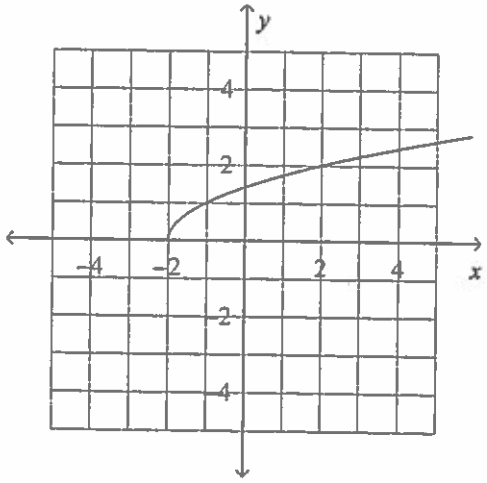
c)



b)



d)

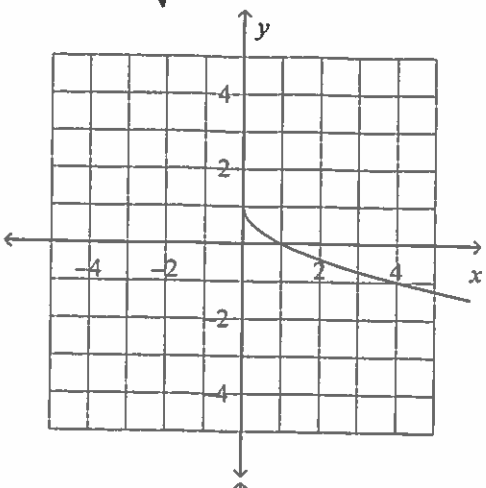


d

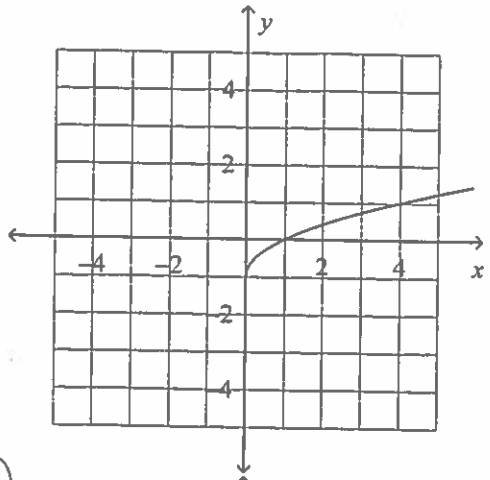
3 **Graph the function.**

$y = \sqrt{x} + 1$ up

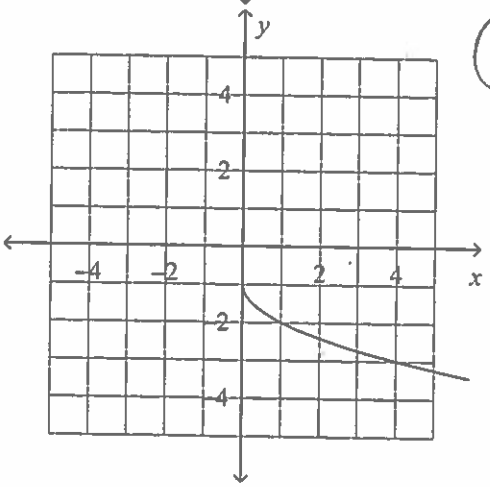
a)



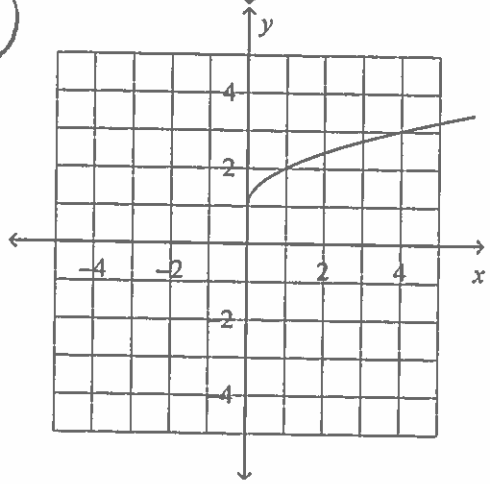
c)



b)



d)



Short Answer

4 Let $f(x) = 3x + 7$ and $g(x) = 2x - 4$. Find $(f \circ g)(5)$.

$g(5) = 2(5) - 4 = 10 - 4 = 6$

$f(6) = 3(6) + 7 = 18 + 7 = 25$

5 **Subtract if possible.**

$2\sqrt{3a} - 6\sqrt{3a}$

$-4\sqrt{3a}$

6 Let $f(x) = 3x - 6$ and $g(x) = x - 2$. Find $\frac{f}{g}$.

$\frac{3x-6}{x-2} = \frac{3(x-2)}{(x-2)} = 3$

7 **Divide and simplify.**

$$\frac{\sqrt{270x^{26}}}{\sqrt{6x^{1}}} = \sqrt{45x^{25}} = \sqrt{(3\cdot 3)5\cdot x^{25}}$$

$5 \quad 9$

$3 \quad 3$

$3x^{12}\sqrt{5x}$

8 Let $f(x) = 7x - 2$ and $g(x) = -3x - 6$. Find $f(x) + g(x)$.

$(7x-2)+(-3x-6)$

$7x-2-3x-6$

$4x-8$

9 **Simplify.**

$(-7-\sqrt{7})(-5+\sqrt{7})$

$35-7\sqrt{7}+5\sqrt{7}-7$

$28-2\sqrt{7}$

10 **Solve the equation.**

$(x-6)^{\frac{2}{3}\cdot\frac{3}{2}} = (9)^{3/2}$

$x-6 = (\sqrt{9})^3$ $\quad x = 33$

$x-6 = 3^3$

$x-6 = 27$

$+6 \quad +6$

11 **Simplify the radical expression.**

$\sqrt[4]{81x^{12}y^8} = 3x^3y^2$

$9 \quad 9$

$3 \quad 3 \quad 3 \quad 3$

12 **Divide and simplify.**

$\frac{\sqrt[3]{48}}{\sqrt[3]{3}} = \sqrt[3]{16} = \sqrt[3]{2\cdot 2\cdot 2\cdot 2}$ $\quad 2\sqrt[3]{2}$

$4 \quad 4$

$2 \quad 2 \quad 2 \quad 2$

13 **Simplify.**

$8^{\frac{2}{3}} = \left(\sqrt[3]{8}\right)^2 = 2^2 = 4$

14 **Find the real-number root.**

$\sqrt[3]{-\frac{125}{343}} = \frac{-5}{7}$

15 Write $(27a^{-9})^{-\frac{2}{3}}$ in simplest form.

$27^{-2/3} \cdot a^{18/3} = \left(\sqrt[3]{27}\right)^{-2} \cdot a^6$

$= 3^{\Theta 2} \cdot a^6 = \frac{a^6}{3^2} = \frac{a^6}{9}$

16 **Multiply and simplify if possible.**

$\sqrt{14} \cdot \sqrt{2} = \sqrt{28} = 2\sqrt{7}$

4 7

2 2

17 **Add if possible.**

$2\sqrt{3x} + 6\sqrt{7x}$ same

$2x + 6x + 2$

$8x + 2$

18 **Simplify the radical expression.**

$\sqrt[2]{36g^6}$ $6g^3$

19 Find all the real square roots of $-\frac{9}{16}$. $\emptyset$

20 Simplify $\sqrt[3]{128a^{10}b^9}$. $= \sqrt[3]{2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 a^{10} b^9}$

$2 \cdot 2 \cdot a^3 b^3 \sqrt[3]{2a}$

$4a^3b^3\sqrt[3]{2a}$

2 64

8 8

2 4 2 4

2 2 2 2

21 Find all the real square roots of 0.0064.

$\pm\sqrt{0.0064} = \pm 0.08$

22 Let $f(x) = 3x + 2$ and $g(x) = x - 3$. Find $f(x) - g(x)$.

$(3x+2)-(x-3) = 3x+2-1x+3 = 2x+5$

23 Multiply and simplify $\sqrt[3]{5x^8} \cdot \sqrt[3]{7x^5}$.

$\sqrt[3]{35x^{13}}$ $\quad 5 \quad 7$

$= x^4\sqrt[3]{35x^1}$

24 Simplify.

$(\sqrt{3}+\sqrt{6})(\sqrt{3}-\sqrt{6})$

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

$3-\sqrt{18}+\sqrt{18}-6$

-3

25 Solve the equation.

$\sqrt{x-6}+2=9$

$-2 \quad -2$

$(\sqrt{x-6})^2=(7)^2$

$x-6=49$

$+6 \quad +6$

$x=55$

$a\sqrt{b}\cdot c\sqrt{d}$

$ac\sqrt{bd}$

1st Semester--More Exam Practice
Answer Section

MULTIPLE CHOICE

1. B
2. A
3. D

SHORT ANSWER

4. 25
5. $-4\sqrt{3a}$
6. 3
7. $3x^{12}\sqrt{5x}$
8. $4x - 8$
9. $28 - 2\sqrt{7}$
10. 33
11. $3x^3y^2$
12. $2\sqrt[3]{2}$
13. 4
14. $-\frac{5}{7}$
15. $\frac{a^6}{9}$
16. $2\sqrt{7}$
17. not possible to simplify
18. $6g^3$
19. no real root
20. $4a^3b^3\sqrt[3]{2a}$
21. 0.08 and –0.08
22. $2x + 5$
23. $x^4 \cdot \sqrt[3]{35x}$
24. –3
25. 55