

ALGEBRA II REVIEW PROBLEMS

(Chapter 7)

1. Simplify the following:

a. $\sqrt[4]{x^{18}y^8}$ b. $(\sqrt{3})(\sqrt{18})$ c. $\frac{\sqrt[3]{640w^3z^8}}{\sqrt[3]{5wz^4}}$ d. $\frac{\sqrt[3]{5}}{\sqrt[3]{6}}$

e. $\frac{2}{2\sqrt{2}-3}$ f. $8\sqrt{45} - 3\sqrt{80}$ g. $(32x^{20}y^{-10})^{-1/5}$ h. $(x^{1/3})(x^{1/6})$

2. Solve the following:

a. $\sqrt{x+20} - x = 0$ b. $\sqrt{4x-12} + 3 = x$ c. $\sqrt{x-2} - \sqrt{2x+3} = -2$

3. Let $f(x) = x^2$ and $g(x) = 3x + 1$; Find the following:

a. $f(x) - g(x)$ b. $(g \circ f)(1)$

4. For each function, find f^{-1} and state whether f^{-1} is a function:

a. $f(x) = 6x + 1$ b. $f(x) = 3x^2 + 1$

5. Graph the following:

a. $y = -\sqrt{x} - 1$ b. $y = \sqrt{x+4}$

6. Find the third term of $(x - 3y)^6$

ANSWERS

1a) $x^4 y^2 \sqrt{x}$

b) $3\sqrt{6}$

c) $4z \sqrt[3]{2w^2z}$

d) $\frac{\sqrt[3]{180}}{6}$

e) $-4\sqrt{2} - 6$

f) $12\sqrt{5}$

g) $\frac{y^2}{2x^4}$

h) \sqrt{x}

2a) $x = 5, -4$ (-4 extraneous)

b) $x = 3, 7$

c) $x = 3, 11$

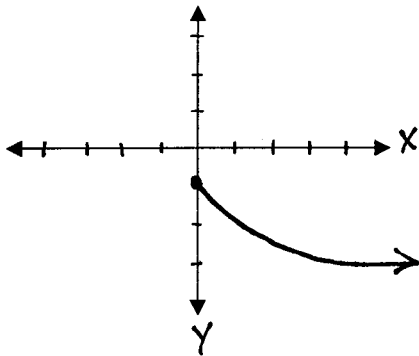
3a) $2x^2 - 3x - 1$

b) 4

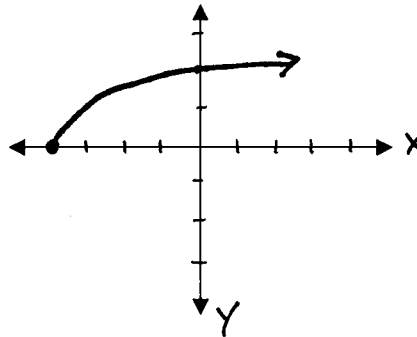
4a) $y = \frac{x-1}{6}$, function

b) $y = \pm \frac{\sqrt{3x-3}}{3}$, not a function

5a)



b)



6) $135x^4 y^2$