

## CHAPTER 7 ANSWERS

### PROBLEM SET 7-1

- |     |               |     |               |     |              |     |              |
|-----|---------------|-----|---------------|-----|--------------|-----|--------------|
| 1.  | 6             | 2.  | -6            | 3.  | No real root | 4.  | 0.6          |
| 5.  | -4            | 6.  | -4            | 7.  | -3           | 8.  | No real root |
| 9.  | $4x$          | 10. | $0.5x^3$      | 11. | $x^4y^9$     | 12. | $8b^{24}$    |
| 13. | $-4a$         | 14. | $3y^2$        | 15. | $x^2y^3$     | 16. | $2y^2$       |
| 17. | $\frac{1}{3}$ | 18. | $\frac{1}{4}$ | 19. | $3xy^2$      | 20. | $-y^4$       |
| 21. | $(x+1)^2$     | 22. | $x$           | 23. | $x^2$        | 24. | $x^3$        |

### PROBLEM SET 7-2 AND 7-3

- |     |                             |     |                              |     |                              |
|-----|-----------------------------|-----|------------------------------|-----|------------------------------|
| 1.  | $10\sqrt{2}$                | 2.  | $4\sqrt[3]{5}$               | 3.  | $3x^6y^5\sqrt{2y}$           |
| 4.  | $20x^2y^3\sqrt{y}$          | 5.  | $10+7\sqrt{2}$               | 6.  | $15+3\sqrt{21}$              |
| 7.  | $5+5\sqrt{3}$               | 8.  | $2x\sqrt[3]{2}$              | 9.  | $3x^2\sqrt[3]{x}$            |
| 10. | $\frac{x\sqrt{10y}}{2y^2}$  | 11. | $\frac{4\sqrt{14x}}{21x}$    | 12. | $-\frac{\sqrt{33x}}{4x}$     |
| 13. | $\frac{\sqrt[3]{3x^2}}{3x}$ | 14. | $\frac{2\sqrt[3]{25x}}{x}$   | 15. | $\frac{\sqrt[3]{2xy^2}}{xy}$ |
| 16. | $\frac{2+3\sqrt[3]{4}}{2}$  | 17. | $\frac{x+5\sqrt[4]{x^3}}{x}$ | 18. | $2\sqrt[3]{2}-\sqrt[3]{12}$  |
| 19. | $\frac{3\sqrt{5}+5}{5}$     | 20. | $\frac{\sqrt{6}-2}{4}$       | 21. | $2\sqrt{3}-\sqrt{2}$         |
| 22. | $8\sqrt{3}$                 | 23. | $5\sqrt{3}-4\sqrt{2}$        | 24. | $-2\sqrt[3]{2}$              |
| 25. | $-36-15\sqrt{2}$            | 26. | $x+3\sqrt{3x}+6$             | 27. | $8+\sqrt{10}$                |
| 28. | $-\frac{1}{2}$              | 29. | $4\sqrt{3}$                  |     |                              |

## PROPERTIES OF EXPONENTS

- |     |                            |     |                  |     |               |
|-----|----------------------------|-----|------------------|-----|---------------|
| 1.  | $12a^8$                    | 2.  | 8                | 3.  | $16x^6y^{10}$ |
| 4.  | $\frac{8y^{12}}{x^{15}}$   | 5.  | $4a^3$           | 6.  | $2x^8y^5$     |
| 7.  | $\frac{1}{2xy^5}$          | 8.  | $\frac{9x^4}{4}$ | 9.  | $-18m^3n^3$   |
| 10. | $\frac{1}{27x^{12}y^{15}}$ | 11. | $\frac{r}{8s^5}$ | 12. | $8x^8$        |
| 13. | $x^7$                      | 14. | $18y^5$          | 15. | $4p^4q^4$     |
| 16. | $2x^2$                     | 17. | $\frac{1}{p^4}$  | 18. | $-5x^3$       |
| 19. | $\frac{t^8}{s}$            | 20. | $3x^2$           | 21. | $s^7t^4$      |
| 22. | $\frac{x^6y^4}{9}$         | 23. | 1                | 24. | $r^2s^3t^2$   |

## PROBLEM SET 7-4

- |     |                                  |     |   |     |                      |     |                             |
|-----|----------------------------------|-----|---|-----|----------------------|-----|-----------------------------|
| 1.  | $10^{\frac{1}{2}}$               | 2.  | $7^{\frac{1}{2}}x^{\frac{3}{2}}$            | 3.  | $(7x)^{\frac{3}{2}}$ | 4.  | $(7x)^{\frac{3}{2}}$        |
| 5.  | $a^{\frac{2}{3}}$                | 6.  | $a^{\frac{2}{3}}$                           | 7.  | $c^{\frac{1}{2}}$    | 8.  | $25x^2y^2$                  |
| 9.  | 4                                | 10. | 16  | 11. | 4                    | 12. | 64                          |
| 13. | $\frac{1}{16}$                   | 14. | $\frac{1}{36}$                              | 15. | $-\frac{1}{81}$      | 16. | 10                          |
| 17. | $\frac{1}{x^2}$                  | 18. | $\frac{x^{\frac{1}{3}}}{3x}$                | 19. | $-\frac{3}{x^3}$     | 20. | $\frac{1}{x}$               |
| 21. | $\frac{y^4}{x^3}$                | 22. | $\frac{y^2}{x^8}$                           | 23. | $x^3y^9$             | 24. | $\frac{y^5}{x^{10}}$        |
| 25. | $x^{\frac{1}{2}}$                | 26. | $y^{\frac{4}{5}}$                           | 27. | $x^{\frac{1}{2}}$    | 28. | $y^{\frac{1}{2}}$           |
| 29. | $x^{\frac{1}{6}}y^{\frac{1}{4}}$ | 30. | $\frac{x^{\frac{3}{4}}y^{\frac{1}{6}}}{xy}$ | 31. | $\frac{4x^7}{9y^9}$  | 32. | $\frac{x^{\frac{2}{3}}}{x}$ |

**PROBLEM SET 7-5**

**1.** 3

**2.**  $-3, -4$

**3.** 1

**4.** 3

**5.** 1

**6.** 2

**7.** 5

**8.** 5

**9.** 8

**10.** 5

**11.** 1

**12.**  $\frac{13}{2}$

**13.**  $\frac{81}{16}$

**14.** 2

**15.** 2

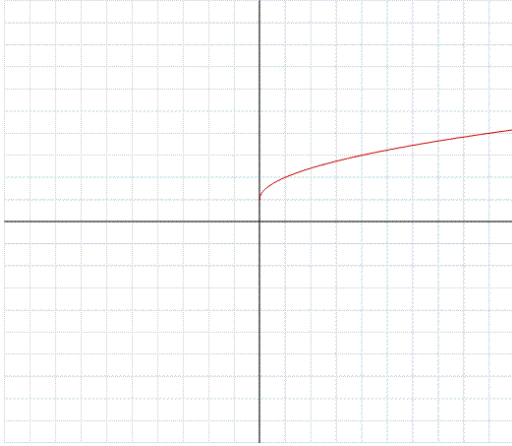
**16.** 25

**17.**  $-1$

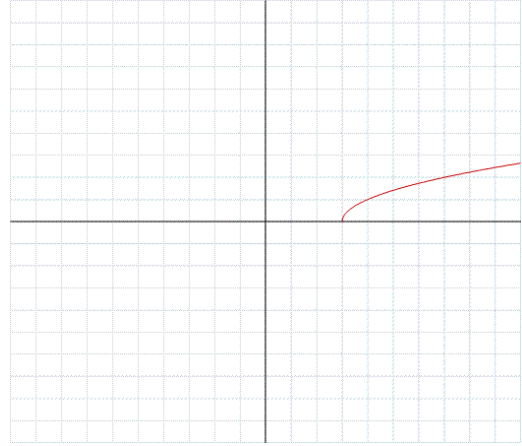
**18.** 1

# PROBLEM SET 7-8

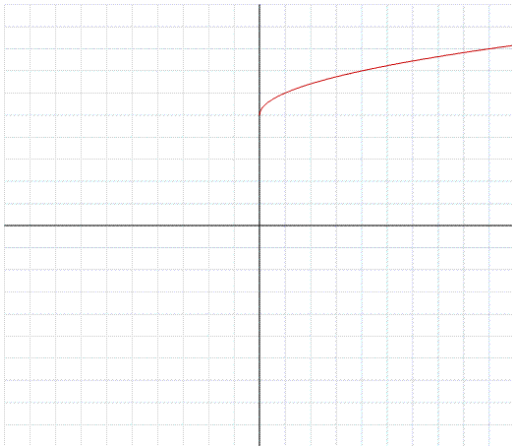
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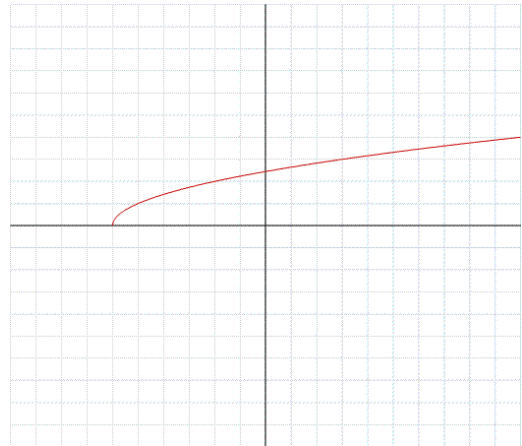
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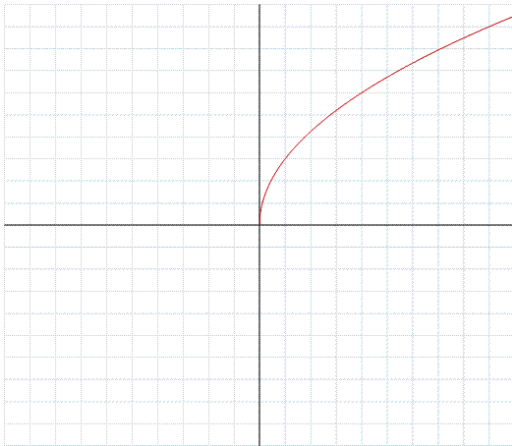
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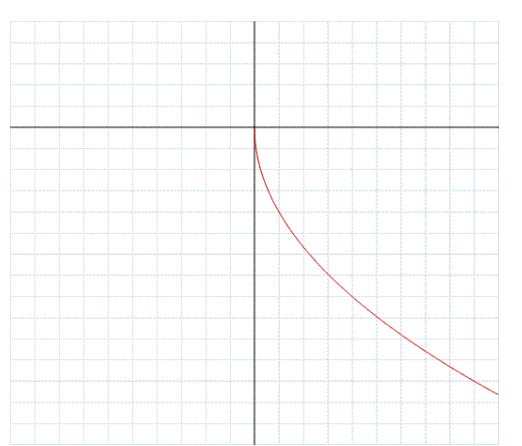
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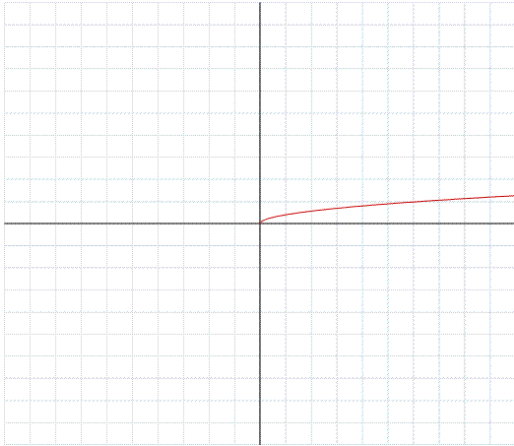
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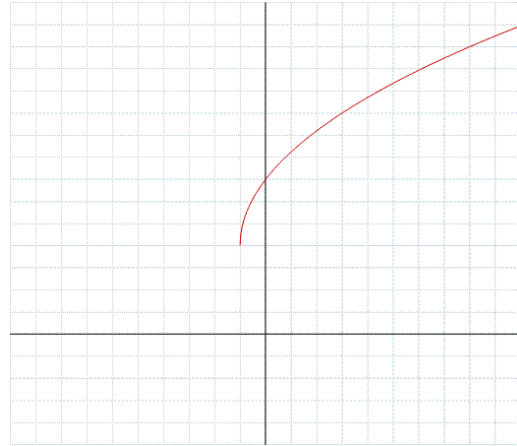
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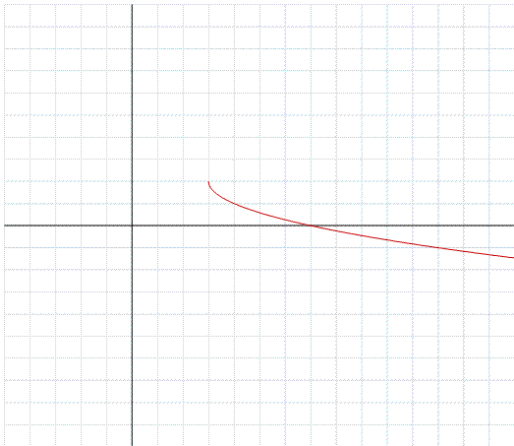
7.



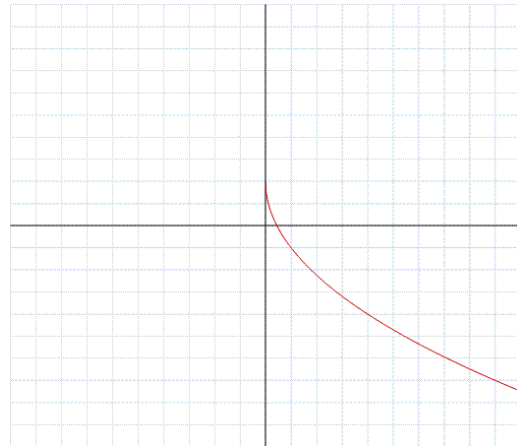
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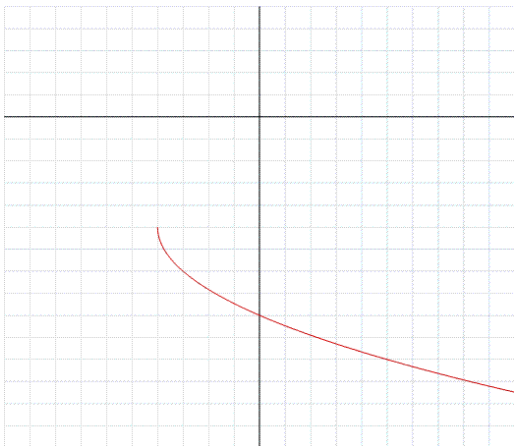
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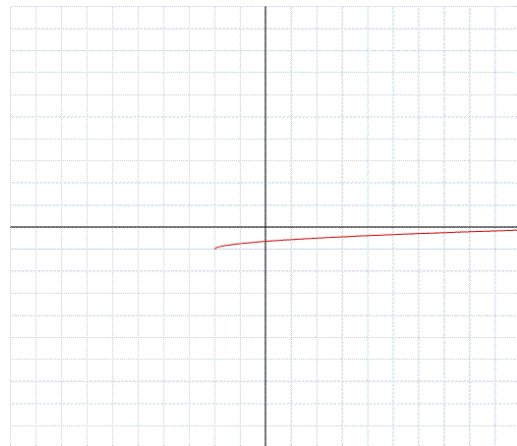
10.



11.



12.



13-15) To be shown in class