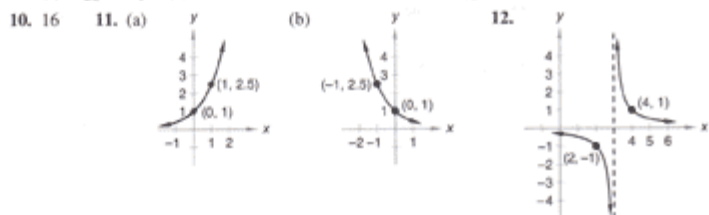Problem Set Answers

26.

STATEMENTS	REASONS
1. $\overline{AB} \cong \overline{CB}$	1. Given
2. $\angle ABD \cong \angle CBD$	2. Given
3. $\overline{BD} \cong \overline{BD}$	3. Reflexive axiom
4. $\triangle ABD \cong \triangle CBD$	4. SAS congruency postulate
5. $\overline{AD} \cong \overline{CD}$	5. CPCTC

27. 35   **28.** $12\sqrt{3}$ m

29. A   **30.** C

problem set 26

1. Charlotte = 30 yr; Emily = 10 yr   **2.** $\frac{80}{7}$ min   **3.** 8 days

4. Donnie = 65 mph; time = 5 hr; Sarah = 45 mph; time = 10 hr   **5.** 800 liters

6. (a) $\log_k 7 = p$ (b) $k^p = 7$ **7.** (a) $b^a = 12$ (b) $\log_b 12 = a$ **8.** 3   **9.** –3

10. 16   **11.** (a)   (b)   **12.**

13. (a) Not a function (b) Function, 1 to 1 (c) Function, not 1 to 1 (d) Function, not 1 to 1

14. (a) $\left\{ x \in \mathbb{R} \mid x \geq -\frac{1}{2} \right\}$ (b) $\{ x \in \mathbb{R} \mid x \geq 0 \}$ (c) $\left\{ x \in \mathbb{R} \mid x \neq -\frac{1}{2}, 3 \right\}$

15. 0   **16.** 0   **17.** 0   **18.** $\frac{\sqrt{2}}{2} - 1$ **19.** (a) –2 (b) 0 (c) 0

20.

STATEMENTS	REASONS
1. $AC \cdot DC = BC \cdot BC$	1. Given
2. $\frac{AC}{BC} = \frac{BC}{DC}$	2. Division
3. $\angle C \cong \angle C$	3. Reflexive axiom
4. $\triangle ABC \sim \triangle BDC$	4. SAS similarity postulate

21. $x = 1$; $y = -1$ **22.** –2

23. $x^2 + xy + y^2$ **24.** $(4x^4 y^2 - 3a^2 b^3)(16x^8 y^4 + 12x^4 y^2 a^2 b^3 + 9a^4 b^6)$

25. $8.06\underline{/119.74°}$; $8.06\underline{/-240.26°}$; $-8.06\underline{/299.74°}$; $-8.06\underline{/-60.26°}$ **26.** $\frac{x-4}{x-7}$ **27.** 65

28. 10 m   **29.** B   **30.** A

problem set 27

1. Marshall = 6 yr; George = 13 yr   **2.** $\frac{40}{3}$ min   **3.** 1 day

4. $N_B = 7$; $N_R = 4$; $N_W = 8$ **5.** 36 acorns   **6.** $y = \frac{2}{3}x - \frac{7}{3}$ **7.** $\log_3 7 = k$

8. $m^n = 8$ **9.** 4   **10.** –3   **11.** 4

12. (a)   (b)   **13.**
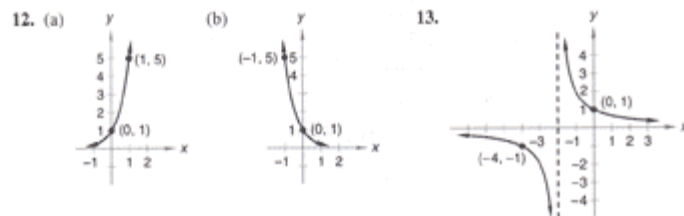
14. (a) Not a function (b) Not a function (c) Function, 1 to 1 (d) Function, not 1 to 1

15. (a) $\left\{ x \in \mathbb{R} \mid x \leq \frac{1}{3} \right\}$ (b) $\{ x \in \mathbb{R} \mid x \geq -10, x \neq 2 \}$ (c) $\{ x \in \mathbb{R} \mid x \neq -3, 1 \}$

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