

35. $(x + 1)(x - 6) = (x - 2)(x + 5); x^2 - 5x - 6 = x^2 + 3x - 10; -8x = -4;$

$x = \frac{1}{2}$

C 36. $(x - 1)(x + 2) = (x - 2)(x + 4); x^2 + x - 2 = x^2 + 2x - 8; -x = -6; x = 6$

37. $5x(x + 5) = 9(4x + 4); 5x^2 + 25x - 36x - 36 = 0; 5x^2 - 11x - 36 = 0;$

$(5x + 9)(x - 4) = 0; 5x + 9 = 0$ or $x - 4 = 0; x = -\frac{9}{5}$ or $x = 4$

38. $(x - 1)(3x - 2) = 10(x + 2); 3x^2 - 5x + 2 = 10x + 20; 3x^2 - 15x - 18 = 0;$

$3(x^2 - 5x - 6) = 0; (x - 6)(x + 1) = 0; x - 6 = 0$ or $x + 1 = 0;$

$x = 6$ or $x = -1$

39. $7y = 4x - 36; 3x + 3y = 5x - 5y, 2x = 8y, x = 4y; 7y = 4(4y) - 36,$

$7y = 16y - 36, -9y = -36, y = 4; x = 16$

40. $2x - 6 = 4y + 8, 2x = 4y + 14, x = 2y + 7; 5x + 5y - 5 = 6x - 6y + 6,$

$-x + 11y = 11, -2y - 7 + 11y = 11, 9y = 18, y = 2; x = 11$

41. Let $\frac{a}{b} = r$. Then $a = br, c = dr$, and $e = fr$. Then $\frac{a + c + e}{b + d + f} = \frac{br + dr + fr}{b + d + f} =$

$\frac{r(b + d + f)}{b + d + f} = r = \frac{a}{b}$

42. Suppose there are n terms, the last being $\frac{j}{k}$. Let $\frac{a}{b} = r$. Then $a = br, c = dr,$

$e = fr, \dots, \text{ and } j = kr$. Then $\frac{a + c + e + \dots + j}{b + d + f + \dots + k} =$

$\frac{br + dr + fr + \dots + kr}{b + d + f + \dots + k} = \frac{r(b + d + f + \dots + k)}{b + d + f + \dots + k} = r = \frac{a}{b}$

43. $b(4a - 9b) = 4a(a - 2b); 4ab - 9b^2 = 4a^2 - 8ab; 4a^2 - 12ab + 9b^2 = 0;$

$(2a - 3b)^2 = 0; 2a - 3b = 0; 2a = 3b; \frac{a}{b} = \frac{3}{2}; a : b = 3 : 2$

Page 250 • CLASSROOM EXERCISES

1. No; corr. sides are not in proportion. 2. Yes 3. No; corr. \sphericalangle s are not \cong .

4. No; corr. \sphericalangle s are not \cong . 5. No 6. No 7. No 8. Yes 9. Yes

10. a. 70; 90 b. $20 : 15 = 4 : 3$ c. $\frac{4}{3} = \frac{DU}{6}, DU = 8; \frac{4}{3} = \frac{28}{Y'J'}, Y'J' = 21;$

$\frac{4}{3} = \frac{12t}{J'U'}, J'U' = 9t$ d. $20 + 28 + 12t + 8 : 15 + 21 + 9t + 6 =$

$56 + 12t : 42 + 9t = 4(14 + 3t) : 3(14 + 3t) = 4 : 3$ e. Corr. \sphericalangle s are not \cong .

Pages 250-252 • WRITTEN EXERCISES

1. always 2. sometimes 3. sometimes 4. sometimes 5. always

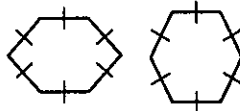
6. sometimes 7. sometimes 8. sometimes 9. always 10. sometimes

11. never 12. never 13. sometimes 14. always 15. $28 : 35 = 4 : 5$
 16. Trap.; $T'U' \parallel E'N'$ 17. 135 18. $360 - (135 + 90 + 90) = 45$
 19. $\frac{4}{5} = \frac{UN}{15}$; $UN = 12$ 20. $\frac{4}{5} = \frac{16}{T'U'}$; $T'U' = 20$ 21. $\frac{4}{5} = \frac{TE}{5k}$; $TE = 4k$
 22. $28 + 4k + 16 + 12 : 35 + 5k + 20 + 15 = 56 + 4k : 70 + 5k =$
 $4(14 + k) : 5(14 + k) = 4 : 5$

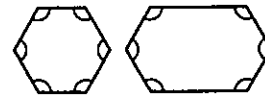
B 23. Property 2

24. The scale factor is $\frac{15}{20} = \frac{3}{4}$; $\frac{3}{4} = \frac{21}{x}$, $x = 28$; $\frac{3}{4} = \frac{18}{y}$, $y = 24$; $\frac{3}{4} = \frac{27}{z}$, $z = 36$
 25. The scale factor is $\frac{15}{10} = \frac{3}{2}$; $\frac{3}{2} = \frac{12}{x}$, $x = 8$; $\frac{3}{2} = \frac{y}{12}$, $y = 18$; $\frac{3}{2} = \frac{18}{z}$, $z = 12$
 26. The scale factor is $\frac{12}{20} = \frac{3}{5}$; $x = 90 - 60 = 30$; $\frac{3}{5} = \frac{y}{40}$, $y = 24$; $\frac{3}{5} = \frac{12\sqrt{3}}{z}$,
 $z = 20\sqrt{3}$
 27. The scale factor is $\frac{10}{24} = \frac{5}{12}$; $\frac{5}{12} = \frac{x}{15}$, $12x = 75$, $x = 6\frac{1}{4}$; $\frac{5}{12} = \frac{y}{16}$, $12y = 80$, $y = 6\frac{2}{3}$
 $\frac{5}{12} = \frac{z}{12}$, $z = 5$

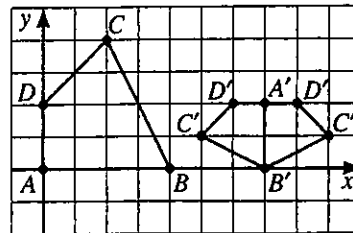
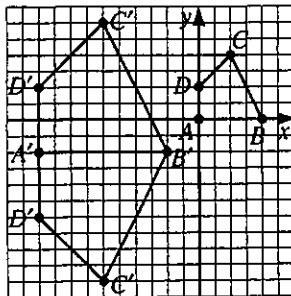
28-29. Drawings may vary. 28.



29.



30. $\frac{AB}{DE} = \frac{BC}{EF} = \frac{AC}{DF}$, so $AB = \frac{BC \cdot DE}{EF}$ or $AB = \frac{AC \cdot DE}{DF}$
 31. $RS = RS$, but $ZR > XR$, so $\frac{RS}{RS} = 1 \neq \frac{ZR}{XR}$
 32. $C'(-6, 6)$ and $D'(-10, 2)$ or $C'(-6, -10)$ and $D'(-10, -6)$
 33. $C'(9, 1)$ and $D'(8, 2)$ or $C'(5, 1)$ and $D'(6, 2)$



34. $\frac{x}{40} = \frac{10}{x}$; $x^2 = 400$; $x = 20$ 35. The measure of each \angle is 90 ; square

C 36. Answers 1

$PQRS \sim$

$$\frac{RS}{ZJ} = \frac{SP}{JT}$$

with $\angle OF$

37. a. $\frac{x}{6} = \frac{6}{x}$

$$x = -6$$

$$x = -3$$

$$\frac{-18 - 18}{-36}$$

Page 252 • SELF-T

1. $3 : 5$ 2.

4. $12x = 72$;

6. $8x = 60$ -

10. 45; 60; 180

13. $\frac{2}{3} = \frac{10}{y}$; $y =$

15. $5x + 5x + 5x = 100$; 6

Page 253 • CALCUL

1. $\frac{AD}{AC} \approx 1.62$;

Page 254 • EXPLO

Corr. \angle s are ratio of corr

Page 256 • CLASSR

1. No 2. Ye

9. Yes; each tr

10. $\angle JIK$ and \angle

11. a. $\triangle HLJ$

$$9y = 90$$
; $y =$