Exercises: Page 24

1. 3, 5. 2. 1, −1. 3. 36, 12. 4. 1, 2, 3. 5. $\frac{284}{41}$, $-\frac{130}{41}$, $-\frac{48}{41}$.

Exercises: Page 27

1. 4, 3; $9\frac{3}{7}$, $-2\frac{3}{7}$. 2. 5, 3; 3, 5. 3. ±3, ∓7; ±5√−5, ∓2√−5. 4. ±2, ∓1; $\pm\frac{14}{13}$, $\mp\frac{1}{13}$. 5. 5, 4; 4, 5. 6. ±2, ∓1; ±1, ∓2. 7. 2, 3; $\frac{154}{137}$, $\frac{108}{137}$. 8. ±7, ∓6; ±6, ∓7. 9. 9, 12; 0, 0. 10. $\frac{5}{3}$, $\frac{3}{5}$; $\frac{3}{5}$, $\frac{5}{3}$; $(-5\pm\sqrt{-35})\div4$, $(-5\mp\sqrt{-35})\div4$. 11. 7, 5; $(2+12m)\div(1+m^2)$, $(2m+12m^2)\div(1+m^2)$ where $m=(-5\pm\sqrt{14})\div11$.

Examples: Page 27

1. One real root between −2 and −1, one between 0 and 1 and one between 3 and 4. 4. 51⅔ c. ft. 7. 2·9, nearly. 8. 5 or $-\frac{1}{2}$. 9. $k=7$, roots 3, 5; $k=-1$, roots +1, −1. 11. 2, −14, $-6\pm\sqrt{-54}$. 12. $(-3\pm\sqrt{102})\div2$, $\{3,-6\}$. 13. 3, $\frac{1}{3}$, $(7\pm\sqrt{13})\div6$. 14. 1, $\frac{1}{2}(m\pm\sqrt{m^2-4})$ where $m=(-1\pm\sqrt{5})\div2$.

15. ±1, $\pm\sqrt{m}$ where $m=\frac{1}{2}(-1\pm\sqrt{-3})$. 16. 3, 5; $\frac{21}{17}$, $-\frac{35}{17}$. 17. 1, 5; 5, 1; 2, 3; 3, 2. 18. ±2, ∓3; ±8√−1, ∓5√−1. 19. 0, 0; $\frac{1}{2}$, $\frac{1}{2}$; −4, 2. 20. 1, 3; 3, 1; $2\pm5\sqrt{-1}$, $2\mp5\sqrt{-1}$. 22. −14. 23. 20 ct. a doz. 24. 150 mi. 25. Line bisected. 27. Equally.

Examples: Page 37

1. 7 : 4 or 5 : 3. 2. −3. 3. 7. 4. $ab:a'b'$. 5. 30. 17. ±3, ±5, ±11. 18. 0, 0, 0; 3, 2, 1. 19. 2, 3, 4.

Exercises: Page 45

1. $a=\frac{22}{7}r^2$. 2. $a=4\frac{2}{7}r^2$. 3. $r=6$. 4. 8·16 ft. 5. 223·15 days.

Exercises: Page 50

1. $v=\frac{1}{3}bh$. 2. $v=3{\cdot}1416\ r^2h$; 197·9208. 3. $53{\cdot}19g$. 4. (1) $y=2$; (2) $x=1{\cdot}5$.

Examples: Page 51

1. $v^2=64{\cdot}4s$. 2. 0·0622 *ohms*. 3. $v=\frac{1}{3}bh$. 5. x and y sides of a right-angled triangle remaining similar to itself. 6. $x=14$. 7. $y=12$. 8. $y=1$. 9. $y=10{\cdot}5$. 10. 1·693 *m*. 11. 3·98125 ft. 12. $x:y::3:4$ or $::4:3$.

Exercises: Page 55

1. (1) 93, $2n-1$; (2) 283, $6n+1$; (3) −155, $33-4n$; (4) −504, $107-13n$. 2. $53+48+43+\ldots\ldots$; −57, −2. 3. 3, 12, 21. 4. 37. 11. 69. 13. 0.