

1. $(\frac{5}{4})^{x^2+1} = (\frac{5}{4})^{-2x}$
 $x^2+1 = -2x$
 $x = -1$ B

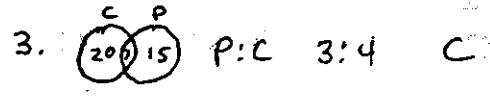
14. $\frac{(x-4)^2}{16} + \frac{(y-3)^2}{9} = 1$ B

$-12(x+2) = (y-3)^2$ A

2. $x^2 - x - 1 + 3x^2 + 2x - 4$
 $4x^2 + 3x - 5$ D

$ab\pi = 12\pi$

26. -34 C



15. ${}_n C_{r-1} a^{n-r+1} b^{r-1}$
 ${}_4 C_5 x^4 (2y)^5$ E

27. $4 - 4i - 1 - (3+i)(4+6i) - 6 + 3 - 4i - 24 - 26i + 6 + 15 - 8i - 38i$ A

4. $150x + 2(50x) = 240$
 $250x = 240$
 $x = \frac{24}{25} \cdot 100 = 96$ C

$\frac{9!}{5!4!} \Rightarrow 126x^4(32y^5)$

28. $\frac{2 \cdot 40 \cdot 50}{40+50}$

5. \perp slope $\frac{2}{3}$ $b = \frac{7}{3}$
 $y = \frac{2}{3}x + \frac{7}{3}$ A
 $3y = 2x + 7$

16. $\frac{(x-1)(x^2+x+1)(2x+3)(3x-5)(4x+2)(3x+6)}{(4x+2)(2x+3)(x-1)(x+1)(3x-5)(3x+6)}$
 $x^2+x+1+x+1 \Rightarrow x^2+2x+2$ C

$\frac{4000}{90} = 44\frac{4}{9}$ A

17. $(\frac{2y+x}{xy})^{-1} = \frac{xy}{2y+x}$ A

29. odd $\therefore \frac{-c}{A}$

$\frac{24}{2} = 12$ B

6. $(x-3)^2 + (y+4)^2 = 12$ A
 12π

18. $2(\frac{a}{1-r}) - 30$

30. $3x + 2xw = r - y$

$2(\frac{30}{\frac{1}{3}}) - 30$ $180 - 30 = 150$ C

$x = \frac{r-y}{3+2w}$ E

7. $\frac{1}{1-\sqrt{3}} = \frac{1+\sqrt{3}}{-2}$ $\frac{1}{1+\sqrt{3}} = \frac{1-\sqrt{3}}{-2}$
 $\frac{-2+1+\sqrt{3}-1+\sqrt{3}}{-2} = \frac{-2+2\sqrt{3}}{-2} = 1-\sqrt{3}$ D

19. $x^2 + 83 = x^2 - 14x + 49$

$x^2 - 15x - 34$ C
 $(x-17)(x+2)$

8. $a^{36/18} \cdot a^{36/18} = a^4$ C

20. $x = 1 + \frac{1}{x}$ $x^2 = x + 1$

$x^2 - x - 1 = 0$ $\frac{1 \pm \sqrt{5}}{2}$ E
 must be positive

9. $\frac{\log k}{\log 5} \cdot \frac{\log x}{\log k} = 3$ E
 $\log_5 x = 3 \therefore x = 125$

21. $a:b:c:d = 12x:9y:9v:14x$

$\frac{3(12x)(9y) - (9y)(14x)}{4(9x)(14v) - 7(12x)(9y)} = \frac{22x}{-28x} = \frac{-11}{14}$ A

10. $\frac{2(3+5i)+5}{i-(3-5i)} = \frac{11+10i}{-3+6i} = \frac{27-96i}{45}$ E
 $\frac{9-32i}{15}$

22. $\frac{b}{g-15} = \frac{2}{1}$ $b = 2g - 30$

$\frac{b-45}{g-15} = \frac{1}{5} \Rightarrow 5b - 225 = g - 5$ B
 $g = 40$ $b = 50$

11. $b^2 - 4ac > 0$ $196 - 20c > 0$ A
 $-20c > -196$ $c < \frac{196}{20} = \frac{49}{5}$

23. $\frac{5}{2} - (2+3i) = \frac{1}{2} - 3i$ D

12. $2 \mid 2 \ 5 \ -11 \ -20 \ 12$
 $\quad 4 \ 18 \ 14 \ -12$
 $-2 \mid 2 \ 9 \ 7 \ -6 \ 10$
 $\quad -4 \ -10 \ 6$
 $2 \ 5 \ -3 \ 10$
 $(2x-1)(x+3) \frac{1}{2}, -3$ B

24. $\frac{1}{4} + \frac{1}{5} + \frac{1}{6} = \frac{1}{2} = \frac{1}{x}$

$15x + 12x + 10x - 30x = 60$
 $x = \frac{60}{7} = 8\frac{4}{7}$
 $\frac{4}{7} = \frac{x}{60} \Rightarrow 34$ C