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|-------|-------|-------|
| 1. D | 12. D | 23. E |
| 2. A | 13. E | 24. E |
| 3. C | 14. A | 25. E |
| 4. A | 15. D | 26. D |
| 5. C | 16. C | 27. C |
| 6. B | 17. A | 28. D |
| 7. C | 18. B | 29. B |
| 8. C | 19. A | 30. B |
| 9. E | 20. D | 31. E |
| 10. D | 21. C | 32. B |
| 11. E | 22. B | 33. D |

Q10

10. $f(x) = 2 - e^{-x}$.

ints: $2 - e^{-x} = 0$

$-e^{-x} = -2$

$e^{-x} = 2$

$-x = \log_e 2$

$x = -0.693$

(C) $d_f = \text{---} R$. $r_f = \text{---} (-0, 2)$

For inverse, ~~---~~

$d_{f^{-1}} = (-0, 2)$ $r_{f^{-1}} = R$

3. (a) domain = $\{x : 0 < x < 10\}$

(b) $A = 20x - 2x^2$.

$\frac{dA}{dx} = 20 - 4x$.

Max when $\frac{dA}{dx} = 0$, $20 - 4x = 0$
 $x = 5$.

$A = 20 \times 5 - 2 \times 5^2 = 100 - 50 = 50$

x	3	5	6
$\frac{dA}{dx}$	8	0	-4
shape	/	-	\

Max TP

$f(x) = x \log_e x$.

$f'(x) = x \times \frac{1}{x} + \log_e x \times 1$ (product rule)

$f(x) = x + \log_e x$.

$\int f'(x) dx = \int (1 + \log_e x) dx$

$f(x) = \int 1 dx + \int \log_e x dx$.

$x \log_e x = x + \int \log_e x dx$

$\int \log_e x dx = x \log_e x - x$.