

THETA INDIVIDUAL TEST ANSWERS

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

THETA STATE TEAM ANSWERS

1.  $f(x) = 3x^2 - 2x + 1$  11.  $7/26$
2.  $\sqrt{2}$  12. 3
3. 32
4. 36
5. 16
6. 9
7.  $5/3$
8. 1065
9. 210
10.  $\{x: -1 < x < 0 \text{ or } x > \frac{3}{2}\}$

ALPHA INDIVIDUAL TEST ANSWERS

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

ALPHA STATE TEAM ANSWERS

1. 20
2.  $\sqrt{15}$
3. 100
4. 13
5. -22
6. 2566
7.  $x = -7/4$  or  $-1 \leq x \leq 4$
8.  $20 + 4\pi$
9. 100/9
10.  $1/3$

THETA SCHOOL TEAM ANSWERS

1. 28
2.  $\frac{2\sqrt{5} + 3\sqrt{15} - 15}{15}$  11. 7
3.  $(1, \sqrt{3})$  12.  $x = -\frac{1}{2}$  or  $-1$
4. 4
5.  $2^2 \cdot 3^3 \cdot 5^2 \cdot 7^2 \cdot 11^2 \cdot 13$
6.  $10^6$  or 1,000,000
7.  $\frac{2y+15}{12y+9}$
8. 0
9.  $-1/32$
10. 15

THETA CIPHERING ANSWERS

1. 12, 6, 3
2. 3, 6, 12 11. -1
3. 27 12.  $4\sqrt{2}$
3. -4, -3, -1, 0 13. 0
4.  $(\pm 100, 10)$  14.  $M^2(100-2m)$
5. 7 15. 24
6. 3
7.  $3/5, -13/5$
8.  $23\frac{1}{2}$
9. +10
10.  $(x^2+1)(x^2-4x+13)$

ALPHA SCHOOL TEAM ANSWERS

1. 5287 11. 16:81
2. 29 12.  $4 + 4\sqrt{2}$
3.  $29/4$
4. -1
5. 30
6.  $\frac{157\sqrt{11}}{30}$
7.  $-5/3$
8.  $-128 - 128\sqrt{3}i$
9. 1:3
10. 7

ALPHA CIPHERING ANSWERS

1. 170 11. 3
2.  $7/3$  12. 720
3. 3276 13. 6
4. 20 14.  $1/2$
5. 33 15.  $2\sqrt{14}$
6. 16
7. 377
8. 0
9. ellipse
10. 2 or  $\frac{19}{9}$