

KUNCI JAWABAN

BUKU KERJA

**KUPAS Matematika
untuk SMA**

KELAS

XI

Ganeca  **exact**

Bab 1 Statistika

I. Pilihan Ganda

- | | | | | |
|------|-------|------------|---------|-----------|
| 1. c | 8. c | 15. b | 22. e | 29. e |
| 2. b | 9. a | 16. b | 23. e | 30. a |
| 3. a | 10. d | 17. e | 24. e | 31. d |
| 4. e | 11. d | 18. 42,86% | 25. 23% | 32. 3,58% |
| 5. e | 12. d | 19. d | 26. d | 33. – |
| 6. c | 13. d | 20. a | 27. b | 34. b |
| 7. a | 14. c | 21. d | 28. e | 35. 66.25 |

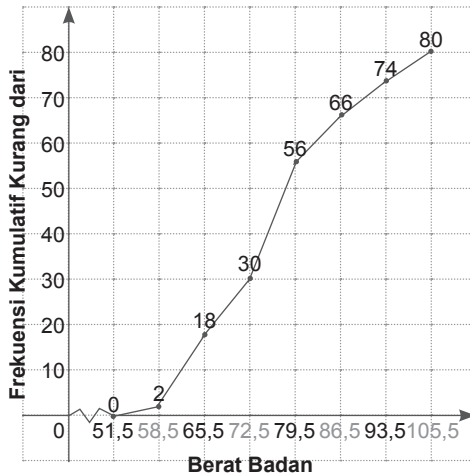
II. Uraian

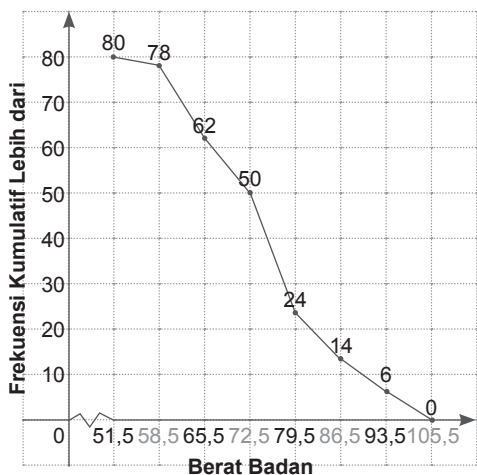
1. a. Tabel distribusi frekuensi

Berat Badan	52–58	59–65	66–72	73–79	80–86	87–93	94–100
Frekuensi	2	16	12	26	10	8	6

- b. 75,475

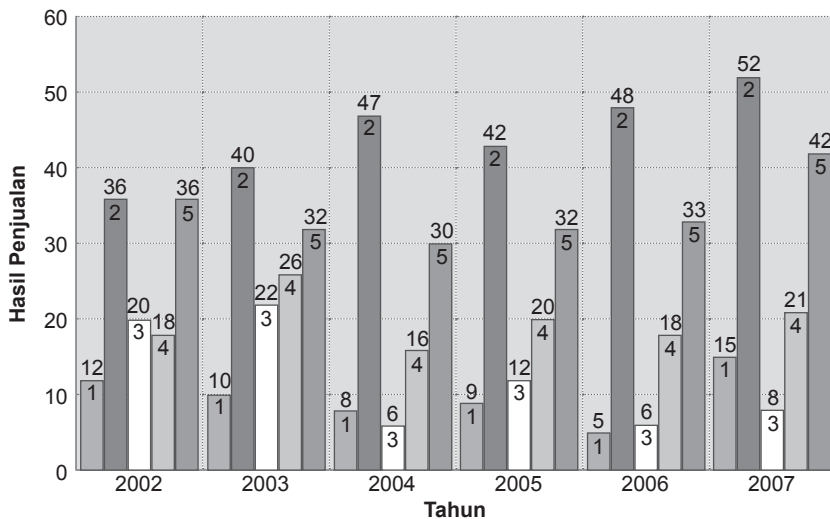
c.





2. 74,25

3. a.



Keterangan

1. Smash 2. Supra X 3. Vega R 4. Jupiter MX 5. Supra FIT

b. supra fit

4. 18,22

5. 10

Bab 2 Peluang

I. Pilihan Ganda

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|------|-------|-------|-------|-------|
| 1. d | 7. b | 13. c | 19. b | 25. a |
| 2. c | 8. c | 14. d | 20. c | 26. c |
| 3. c | 9. b | 15. b | 21. e | 27. d |
| 4. b | 10. a | 16. d | 22. d | 28. e |
| 5. d | 11. b | 17. d | 23. a | 29. b |
| 6. b | 12. c | 18. b | 24. d | 30. a |

II. Uraian

1. a. 1.680 b. 4.096 c. 2.744
2. a. 720 b. 120
3. a. $(x + y)^4 = x^4 + 4x^3y + 6x^2y^2 + 4xy^3 + y^4$.
 b. $(5a - 2)^5 = 15.625a^5 - 31.250a^4 + 5.000a^3 - 2.000a^2 + 4.000a - 32$
 c. $(3p - 2q)^6 = 729p^6 - 2.916p^5q + 4.860p^4q^2 - 4.320p^3q^3 + 2.160p^2q^4 - 576pq^5 + 64$.
 d. $(x^2 - 2y)^6 = x^{12} - 12x^{10}y + 60x^8y^2 - 160x^6y^3 + 240x^4y^4 - 192x^2y^5 + 64y^6$.
 e. $(5a^3 + 3b^2)^4 = 625a^{12} + 1.500a^9b^2 + 1.350a^6b^4 + 540a^3b^6 + 81b^8$.
 f. $\left(\frac{1}{p} + 2q\right)^6 = \frac{1}{p^6} + \frac{12}{p^5} + \frac{60}{p^4}q^2 + \frac{164}{p^3}q^3 + \frac{240}{p^2}q^4 + \frac{192}{p}q^5 + 64q^6$.
4. a. $35a^3b^4$ b. $-b^7$ c. $25.344a^7b^5$ d. $\frac{-10b^9}{6.561a}$.
5. a. 1 b. 0 c. 0,4 d. 0,5

Bab 3 Trigonometri dan Fungsi Trigonometri

I. Pilihan Ganda

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|------|----------------------------------|-------|-------|-------|
| 1. b | 8. e | 15. e | 22. c | 29. a |
| 2. e | 9. b | 16. e | 23. b | 30. c |
| 3. b | 10. d | 17. a | 24. e | 31. e |
| 4. a | 11. c | 18. b | 25. d | 32. d |
| 5. a | 12. d | 19. e | 26. d | 33. c |
| 6. c | 13. b | 20. d | 27. d | 34. c |
| 7. c | 14. $\frac{2\sqrt{2(x-1)}}{x-3}$ | 21. d | 28. d | 35. d |

II. Uraian

1. a. $\frac{1 - \frac{1}{3}\sqrt{3}}{1 + \frac{1}{3}\sqrt{3}}$ c. $\frac{1}{4}\sqrt{2}(\sqrt{3} + 1)$
- b. $-\frac{1}{4}\sqrt{2}(1 + \sqrt{3})$ d. $\frac{-(1 + \frac{1}{3}\sqrt{3})}{1 - \frac{1}{3}\sqrt{3}}$
2. a. -1 b. $\frac{1}{2}$ c. -1 d. $\sqrt{3}$
3. a. Terbukti
b. Terbukti
c. Terbukti
d. Terbukti
4. a. $x^2 - y^2 = (\cos \theta + \sin \theta) - (\cos \theta - \sin \theta)^2$
 $= \cos^2 \theta + 2 \sin \theta \cos \theta + \sin^2 \theta - (\cos^2 \theta - 2 \sin \theta \cos \theta + \sin^2 \theta)$
 $= 4 \sin \theta \cos \theta = 2 \sin 2\theta.$
- b. $x^2 + y^2 = 2$
- c. $\sec 2\theta + 2 \tan 2\theta.$
5. $-$

Bab 4 Lingkaran

I. Pilihan Ganda

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|------|-------|-------|-------|--------|
| 1. b | 7. e | 13. e | 19. d | 25. d |
| 2. b | 8. b | 14. b | 20. b | 26. * |
| 3. b | 9. d | 15. d | 21. b | 27. d |
| 4. a | 10. d | 16. d | 22. a | 28. b |
| 5. e | 11. b | 17. d | 23. e | 29. ** |
| 6. c | 12. a | 18. d | 24. c | 30. a |

Catatan:

* $x^2 + y^2 - 6x - 10y + 38 = 0$ atau $x^2 + y^2 - 6x - 10y + 98 = 0.$

** $6x + 3y = 45, -3x + 6y = 45.$

II. Uraian

1. a. Pusat $(-5,1)$ dan jari-jari $= 2\sqrt{5}$. d. Pusat $(1,-2)$ dan jari-jari $= 5$.
 b. Pusat $(2,4)$ dan jari-jari $= \sqrt{10}$. e. Pusat $(-1,4)$ dan jari-jari $= \sqrt{5}$.
 c. Pusat $(5,-1)$ dan jari-jari $= 3$. f. Pusat $\left(\frac{3}{2}, \frac{3}{2}\right)$ dan jari-jari $= \sqrt{\frac{9}{2}}$.
2. $2\sqrt{2}$
3. a. $2x + y - 1 = 0$ atau $2x + y - 21 = 0$
 b. $y - \sqrt{3}x - (12 + \sqrt{3}) = 0$ atau $y - \sqrt{3}x - (\sqrt{3} - 8) = 0$.
 c. $x - y - (2 - \sqrt{2}) = 0$ atau $x - y - (2 + \sqrt{2}) = 0$
 d. $4x + 3y - 14 = 0$
 e. $3x - 4y + 15 = 0$
4. 45°
5. -

Ujian Akhir Semester 1**I. Pilihan Ganda**

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|------|-------|-------|-------|-------|
| 1. a | 9. b | 17. e | 25. a | 33. b |
| 2. d | 10. b | 18. b | 26. a | 34. a |
| 3. a | 11. a | 19. d | 27. b | 35. a |
| 4. a | 12. e | 20. b | 28. c | 36. c |
| 5. a | 13. a | 21. d | 29. e | 37. a |
| 6. d | 14. e | 22. e | 30. a | 38. c |
| 7. c | 15. e | 23. a | 31. c | 39. e |
| 8. a | 16. c | 24. d | 32. d | 40. e |

II. Uraian

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|--|---|
| 1. $Q_1 = 3$; $Q_2 = 5,5$; dan $Q_3 = 8$.
Modus = 3, 4, 5 dan mean = 5,3

2. 81

3. Modus = 76,7 dan median = 76,81.

4. a. $\frac{11}{76}$ b. $\frac{11}{342}$

5. 0,23 | 6. 36

7. $\frac{1}{9}$

8. $\frac{44}{125}$

9. -

10. $(x - 2)^2 + (y - 2)^2 = 8$ |
|--|---|

II. Uraian

- $f(2+p) = p^2 - p$
 $[f(2+p) - f(2)] = p^2 - p$
 $\left(\frac{f(2+p)}{p}\right) = p - 1.$
 - $p = -2$ atau $p = 3$
 - $R_f = \left\{y \mid 2 \leq -\frac{1}{4} \leq y \leq 0, y \in \mathbb{R}\right\}$
 - $R_f = \{y \mid 2 \leq y \leq 6, y \in \mathbb{R}\}$
- $D_f = \{x \mid x < -5 \text{ atau } x > 5, x \in \mathbb{R}\}$
 - $D_f = \{x \mid x \neq -2 \text{ atau } x \neq 3, x \in \mathbb{R}\}$
 - $x \geq 4$
 - $x \geq 4$
 - $x \geq 4$
 - $x > 4$
- $\sqrt{\frac{2x^2 - 2x + 1}{x^2 - 2x + 1}}$
 - $\frac{\sqrt{1+x^2}}{\sqrt{1+x^2} - 1}$
 - $\sqrt{5}$
 - $\sqrt{11}$
 - $\frac{\sqrt{7}}{\sqrt{7}-1}$
 - 4
- $f^{-1}(x) = x - 3$
 - $f^{-1}(x) = \frac{x+1}{3}$
 - $f^{-1}(x) = \frac{x}{2} - 5$
 - $f^{-1}(x) = \frac{x}{2} - 5$
 - $f^{-1}(x) = 5x + 9$
 - $f^{-1}(x) = \frac{3x+2}{-x+2}$
 - $f^{-1}(x) = \frac{4x-3}{2x}$
 - $f^{-1}(x) = \frac{x-2}{-2x+3}$

Bab 7 Limit Fungsi**I. Pilihan Ganda**

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|------|-------|-------|-------|-------|
| 1. d | 7. e | 13. c | 19. a | 25. b |
| 2. e | 8. d | 14. d | 20. a | 26. c |
| 3. c | 9. d | 15. d | 21. c | 27. d |
| 4. c | 10. d | 16. e | 22. c | 28. c |
| 5. c | 11. d | 17. d | 23. d | 29. d |
| 6. b | 12. b | 18. b | 24. b | 30. e |

II. Uraian

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|---------|----------------|------------------|
| 1. a. 6 | c. $2\sqrt{3}$ | e. $\frac{1}{4}$ |
| b. 1 | d. 2 | f. 8 |

