PEMBAHASAN UCUN-1 MATEMATIKA-A

No.	Pembahasan	Kunci
1	$p - q : r = 7\frac{2}{7} - 2\frac{1}{4} : 3\frac{1}{2} = 7\frac{2}{7} - \frac{9}{14} = 6\frac{9}{14}$	D
2	$B = 36 \times 4 = 144$, $S = 7 \times (-2) = -14$, $TJ = 7 \times (-1) = -7$ $Skor = 144 + (-14) + (-7) = 123$	C
3	$Jumlah = 5x + 7x = 12x = Rp84.000,00$ $x = Rp7.000,00$ $Selisih = 7x - 5x = 2x = Rp14.000,00$	C
4	$x = \frac{240 \times 20}{25} = 192\ orang$	B
5	$\left(27^{\frac{1}{2}}\right)^{\frac{4}{3}} = 3^{3 \times \frac{1}{2} \times \frac{4}{3}} = 3^2 = 9$	A
6	$\frac{12}{3\sqrt{6}} = \frac{4}{\sqrt{6}} = \frac{2}{3}\sqrt{6}$	C
7	$Bunga = \frac{10}{12} \times \frac{18}{100} \times 600.000 = Rp90.000,00$ $Angsuran = \frac{600.000 + 90.000}{10} = Rp69.000,00$	C
8	$U_{60} = a + 59b = 3 + 59(4) = 239$	C
9	$\frac{U_5}{U_2} = \frac{ar^4}{ar} = r^3 = \frac{240}{30} = 8 \leftrightarrow r = 2, a = 15$ $S_7 = \frac{15(2^7 - 1)}{2 - 1} = 15 \times 127 = 1.905$	C
10	$S_n = \frac{15}{2}\left(2(16) + 14(3)\right) = 555$	A
11	$6x^2 - 29x + 20 = (6x - 5)(x - 4)$	C
12	$\frac{1}{4}x - 2 > 8 + \frac{2}{3}x \leftrightarrow 3x - 24 > 96 + 8x \leftrightarrow -120 > 5x \leftrightarrow -24 > x$	D
13	$C = 5K$, $3C + 4K = 342.000 \dashrightarrow 19K = 342.000 \dashrightarrow K = 18.000 \dashrightarrow C = 90.000$	C
14	$P = \{3, 5, 7, 9, 11\}$, $Q = \{2, 3, 5, 7\}$, $P - Q = \{9, 11\}$	B
15	$A \cap B = \{2, 3, 5, 7\}$, diagram yang benar adalah gambar d.	D
16	Pemetaan yang benar (2) dan (3)	C
17	$f(x) = 3x + 10$, $f(-1) = 3(-1) + 10 = 7 = a$ $f(b) = 3b + 10 = -2 \leftrightarrow b = -4$, jadi $a + b = 7 + (-4) = 3$	D
18	$m = 3 \leftrightarrow y = 3x + c$, melalui $(-3, 2) \leftrightarrow 2 = 3(-3) + c \leftrightarrow c = 11$, sehingga $y = 3x + 11$ atau $y - 3x = 11$	C
19	$2x - 3y = 6$ Jika $x = 0$, maka $y = -2$ sehingga melalui $(0, -2)$ Jika $y = 0$, maka $x = 3$ sehingga melalui $(3,0)$, grafiknya adalah d	D
20	$4J + 5T = 600 \leftrightarrow 12J + 15T = 1.800$ $3J + 2t = 380 \leftrightarrow 12J + 8t = 1.520$ $7T = 280 \leftrightarrow T = 40$ $3J + 2(40) = 380 \leftrightarrow 3J = 300 \leftrightarrow J = 100$ Sehingga $1J + 3T = 100 + 120 = 220$	A

No.	Pembahasan	Kunci
21	*Ukuran panjang segitiga siku-siku adalah 8cm, 15cm, 17 cm karena memenuhi* $8^2 + 15^2 = 17^2$	B
22	$L_{trapesium} = \frac{1}{2} \times 8(34 + 22) = 224\ cm^2$ $L_{segitiga} = \frac{1}{2} \times 16 \times 30 = 240\ cm^2$, *Luas total* $= 464\ cm^2$	C
23	$K = 2p + 2l = 24 + 18 = 42\ m$ $Biaya = \frac{42}{3} \times 800.000 = Rp11.200.000,00$	C
24	*Sudut ACD = sudut BCE, sisi CD = sisi CE, sudut ADC = sudut BEC*	D
25	$PQ^2 = QS \times QR = 4 \times 13 = 52 \leftrightarrow PQ = \sqrt{52}$	B
26	$x = \frac{2 \times 24}{1,5} = 32m$	A
27	$3x + 5^0 + 2x - 45^0 = 180^0 \leftrightarrow 5x = 220^0 \leftrightarrow x = 44^0$, *sehingga sudut* $PQS = 2x - 45^0 = 43^0$	B
28	*Garis sumbu adalah DE karena membagi dua sama panjang dan tegak lurus BC*	C
29	$Luas\ arsir = \frac{60^0}{360^0} \times \frac{22}{7} \times 14 \times 14 = 102,67\ cm^2$	B
30	$(r_1 + r_2)^2 = 17^2 - 8^2 \leftrightarrow 10 + r_2 = 15 \leftrightarrow r_2 = 5\ cm$	B
31	*Daerah arsir dinamakan bidang diagonal*	A
32	*Panjang Kawat = 2 (7+10+15) + 3(17) = 64 + 51 = 115 cm* *Sisa kawat = 400 – 3(115) = 55 cm*	B
33	$Luas\ Prisma = 2\ La + Ka.t = 2 \times \frac{5 \times 12}{2} + (5 + 12 + 13)15 = 60 + 450 = 510\ cm^2$	B
34	$Volum\ ½\ bola = \frac{2}{3} \times 3,14 \times 15^3 = 7.065\ cm^3$ $Volum\ kerucut = \frac{1}{3} \times 3,14 \times 15^2 \times 36 = 8.478\ cm^3$ *Volum total = 15.543* cm^3	A
35	$Luas\ ½\ bola = 2 \times \frac{22}{7} \times 7 \times 7 = 308\ m^2$ *Biaya = 308 × 200.000 = Rp61.600.000,00*	B
36	*2, 3, 5, 5, 5, 6, 7, 7, 7, 7, 9, 10* *Median = 6,5 dan modus =7*	A
37	*Mean =(20+15+24+21+16+18+10)/20 = 6,2* *Nilai > rata-rata = 3+2+2+1 = 8 orang*	C
38	$PNS = \frac{50^0}{360^0} \times 180 = 25\ orang$	A
39	$Peluang\ 3\ angka = \frac{1}{8} = 0,125$	A
40	$Peluang\ terambil\ biru = \frac{26-1}{10+5+(26-1)} = \frac{25}{40} = \frac{5}{8}$	C

PEMBAHASAN UCUN-1 MATEMATIKA-B

No.	Pembahasan	Kunci
1	$p - q : r = 10\frac{2}{7} - 2\frac{1}{4} : 3\frac{1}{2} = 10\frac{2}{7} - \frac{9}{14} = 9\frac{9}{14}$	B
2	$B = 35 \times 4 = 140$, $S = 6 \times (-2) = -12$, $TJ = 9 \times (-1) = -9$ $Skor = 140 + (-12) + (-9) = 119$	A
3	$Selisih = 9x - 4x = 5x = Rp30.000,00 \leftrightarrow x = Rp6.000,00$ $Jumlah = 9x + 4x = 13x = Rp78.000,00$	D
4	$Jarak = \frac{120 \times 12}{16} = 90\ km$	C
5	$\left(125^{\frac{1}{2}}\right)^{\frac{4}{3}} = 5^{3 \times \frac{1}{2} \times \frac{4}{3}} = 5^2 = 25$	D
6	$\frac{12}{4\sqrt{3}} = \frac{3}{\sqrt{3}} = \sqrt{3}$	D
7	$Bunga = \frac{10}{12} \times \frac{24}{100} \times 800.000 = Rp160.000,00$ $Angsuran = \frac{800.000 + 160.000}{10} = Rp96.000,00$	C
8	$U_{80} = a + 79b = 4 + 79(3) = 241$	A
9	$\frac{U_5}{U_3} = \frac{ar^4}{ar^2} = r^2 = \frac{810}{90} = 9 \leftrightarrow r = 3, a = 10$ $S_6 = \frac{10(3^6 - 1)}{3 - 1} = 5 \times 728 = 3.640$	D
10	$S_n = \frac{17}{2}\left(2(10) + 16(3)\right) = 578$	A
11	$4x^2 - 11x - 20 = (4x + 5)(x - 4)$	B
12	$\frac{1}{2}x - 2 > 4 + \frac{4}{5}x \leftrightarrow 5x - 20 > 40 + 8x \leftrightarrow -60 > 3x \leftrightarrow -20 > x$	A
13	$C = 4K$, $4C + 3K = 380.000 \leftrightarrow 19K = 380.000 \leftrightarrow K = 20.000 \rightarrow C = 80.000$	B
14	$P = \{1, 3, 5, 15\}$, $Q = \{3, 5, 7, 9, 11\}$, $P - Q = \{1, 15\}$	A
15	$A \cap B = \{2, 3, 5, 7\}$, diagram yang benar adalah gambar d.	D
16	Pemetaan yang benar (1)	A
17	$f(x) = 3x + 9$, $f(-2) = 3(-2) + 9 = 3 = a$ $f(b) = 3b + 9 = -6 \leftrightarrow b = -5$, jadi $a + b = 3 + (-5) = -2$	B
18	$m = \frac{1}{3} \leftrightarrow y = \frac{1}{3}x + c$, melalui $(-3, 2) \leftrightarrow 2 = -1 + c \leftrightarrow c = -3$, sehingga $y = \frac{1}{3}x - 3$ atau $3y - x = -9$	A
19	$4y - 3x = 12$ Jika $x = 0$, maka $y = 3$ sehingga melalui $(0, 3)$ Jika $y = 0$, maka $x = -4$ sehingga melalui $(-4,0)$, grafiknya adalah b	B
20	$2M + 5J = 60 \leftrightarrow 4M + 10J = 120$ $4M + 3J = 64 \leftrightarrow 4M + 3J = 64$ $7J = 56 \leftrightarrow J = 8$ $4M + 3(8) = 64 \leftrightarrow 4M = 40 \leftrightarrow M = 10$ Sehingga $3M + 2J = 30 + 16 = 46$	D

No.	Pembahasan	Kunci
21	*Ukuran panjang segitiga siku-siku adalah 16cm, 30cm, 34cm karena* $16^2 + 30^2 = 34^2$	D
22	$L_{trapesium} = \frac{1}{2} \times 4(11 + 17) = 56\ cm^2$ $L_{segitiga} = \frac{1}{2} \times 8 \times 15 = 60\ cm^2$, *Luas total* $= 116\ cm^2$	B
23	$K = 2p + 2l = 56 + 32 = 88m$ $Biaya = \frac{88}{4} \times 600.000 = Rp13.200.000,00$	B
24	*Sisi DE = sisi CE, Sudut AED = sudut BEC, sisi AE= sisi BE*	B
25	$AD^2 = DC \times DB = 9 \times 4 = 36 \leftrightarrow AD = 6\ cm$	C
26	$t = \frac{1{,}5 \times 12}{2} = 9m$	D
27	$4x + 5^0 + 2x - 35^0 = 180^0 \leftrightarrow 6x = 210^0 \leftrightarrow x = 35^0$, *sehingga sudut PQR=* $4x + 5^0 = 145^0$	A
28	*CD adalah garis bagi karena membagi sudut C menjadi dua bagian yang sama besar.*	C
29	$Luas\ arsir = \frac{72^0}{360^0} \times \frac{22}{7} \times 14 \times 14 = 123{,}2\ cm^2$	A
30	$(r_1 - r_2)^2 = 26^2 - 24^2 \leftrightarrow 14 - r_2 = 10 \leftrightarrow r_2 = 4\ cm$	A
31	*Garis CE dinamakan diagonal ruang*	C
32	*Panjang Kawat = 2 (9+15+16) + 3(25) = 80 + 75 = 155 cm* *Sisa kawat = 500 – 3(155) = 35 cm*	D
33	$Luas\ Prisma = 2\ La + Ka.t = 2 \times \frac{8 \times 15}{2} + (8 + 15 + 17) \times 13 = 120 + 520 = 640\ cm^2$	B
34	$Volum\ ½\ bola = \frac{2}{3} \times 3{,}14 \times 10^3 = 2.093{,}33\ cm^3$ $Volum\ kerucut = \frac{1}{3} \times 3{,}14 \times 10^2 \times 24 = 2.512\ cm^3$ *Volum total = 4.605,33* cm^3	A
35	$Luas\ ½\ bola = 2 \times \frac{22}{7} \times \frac{21}{2} \times \frac{21}{2} = 693\ m^2$ *Biaya = 693 × 100.000 = Rp69.300.000,00*	D
36	*50, 60, 65, 70, 70, 80, 80, 80, 85, 90* *Median = 75 dan modus =80*	B
37	*Mean =(20+10+24+21+16+27+10)/20 = 6,4* *Nilai < rata-rata = 5+2+4= 11orang*	D
38	$Tani = \frac{20}{16} \times 80 = 100\ orang$	C
39	$Peluang\ 2\ angka = \frac{3}{8} = 0{,}375$	C
40	$Peluang\ terambil\ putih = \frac{5-1}{10+(5-1)+26} = \frac{4}{40} = \frac{1}{10}$	A