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ADD MATHS TINGKATAN 5 CIKGU EZA

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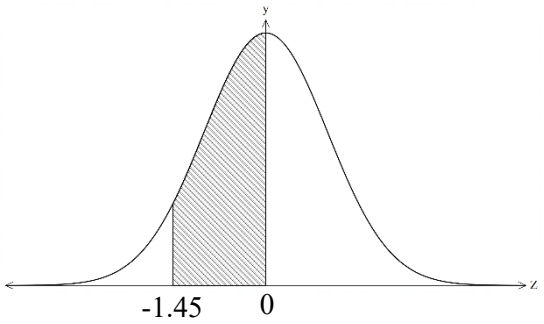
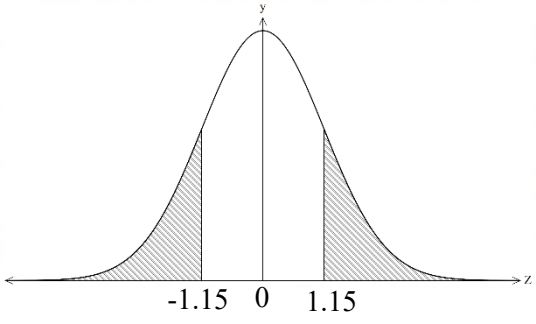
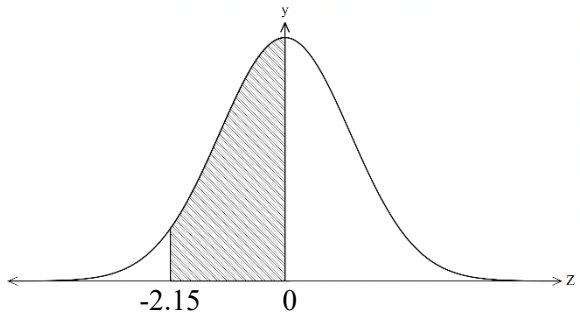
BAB	**TOPIK**	**TARIKH**	**CATATAN**
1	SUKATAN MEMBULAT		
2	PEMBEZAAN		
3	PENGAMIRAN		
4	PILIH ATUR DAN GABUNGAN		
5	TABURAN KEBARANGKALIAN		
6	FUNGSI TRIOGOMETRI		
7	PENGATURCARAAN LINEAR		
8	KINEMATIK GERAKAN LINEAR		

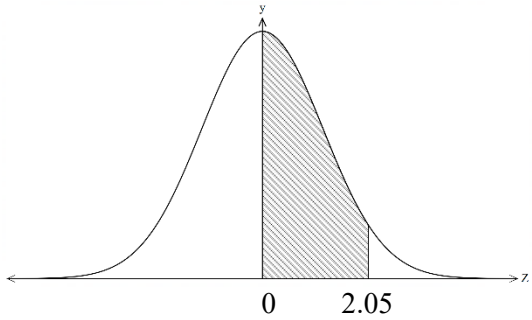
HITUNG KEBARANGKALIAN Z DIBERI.
CALCULATE PROBABILITY Z GIVEN.

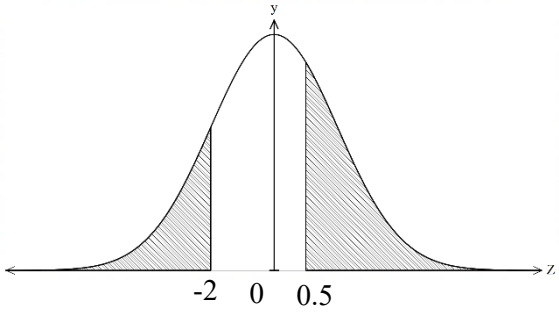
1. Tuliskan tanda notasi yang betul dan hitung kebarangkalian kawasan berlorek.
Write the correct notation and calculate probability of shaded regions.

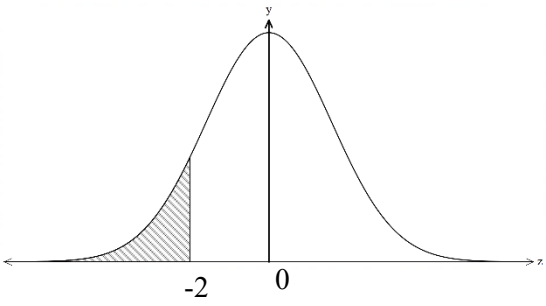






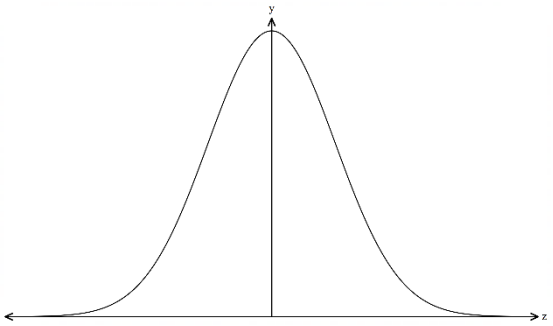
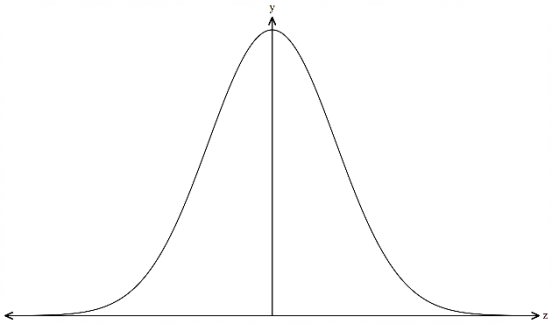
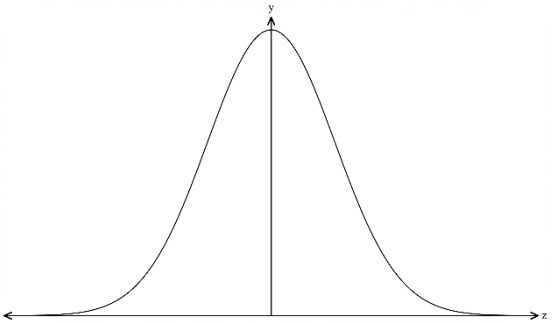
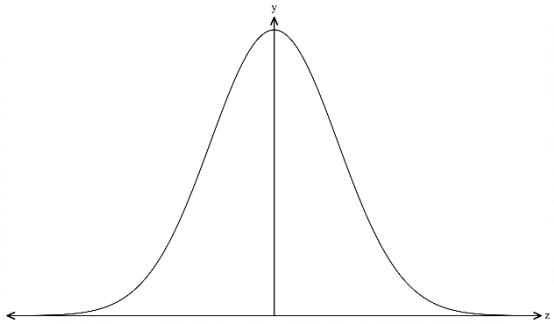
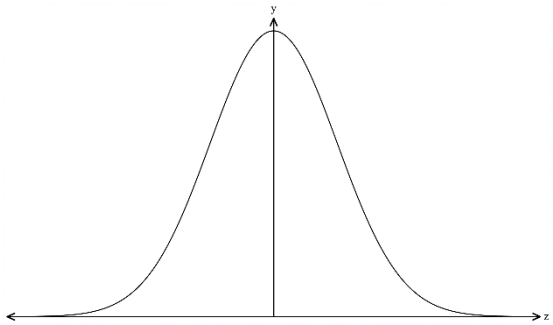
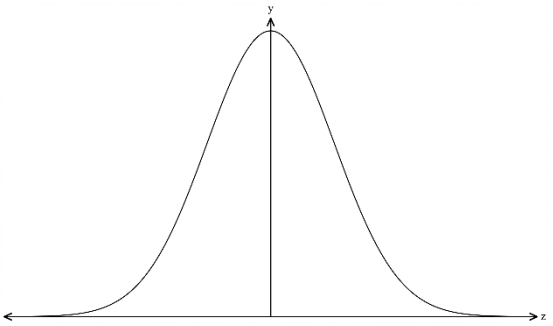






HITUNG KEBARANGKALIAN X DIBERI.
CALCULATE PROBABILITY X GIVEN.

2. Satu pemboleh ubah rawak selanjar X bertaburan Normak, $X \sim N(8,5)$. Lorek kawasan kebarangkalian dan hitung kebarangkalian kawasan berlorek itu.

 $P(x \geq -5)$	 $P(5 \leq x \leq 10)$
 $P(x \leq -7)$	 $P(8 \leq x \leq 12)$
 $P(x \geq 6)$	 $P(x \leq 9)$

3. CARI NILAI $Z, X, \mu,$ atau σ ,JIKA KEBARANGKALIAN DIBERI.
FIND $Z, X, \mu,$ OR σ, *IF PROBABILITY WAS GIVEN.*

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a) Skor ujian Bahasa mengikut taburan normal. Diberi bahawa **10% pelajar mendapat markah lebih daripada 85**. Jika **min = 70**, cari **sisihan piawai**.
*Language test scores follow a normal distribution. It is given that **10% of students scored more than 85**. If the **mean is 70**, find the **standard deviation**.*

b) Diberi bahawa **P(X < x) = 0.975** dalam suatu taburan normal dengan sisihan piawai 6 dan min tidak diketahui. Jika nilai **x = 72**, cari nilai **min**.
*It is given that **P(X < x) = 0.975** in a normal distribution with a standard deviation of 6 and an unknown mean. If **x = 72**, find the **mean**.*

c) Dalam satu taburan normal, diketahui bahawa P(X > x) = 0.3085, dan min ialah 50 serta sisihan piawai ialah 10. Cari nilai x.
*In a normal distribution, it is known that **P(X > x) = 0.3085**, with a mean of 50 and a standard deviation of 10. Find the **x-value**.*

d) Diberi bahawa skor peperiksaan murid mengikut taburan normal dengan min 60 dan sisihan piawai 10. Cari nilai z jika skor murid ialah 75.
Given that exam scores follow a normal distribution with a mean of 60 and a standard deviation of 10, find the z-value if a student scored 75.

e) Diberi bahawa dalam suatu taburan normal, z = 1.28 bersamaan dengan kebarangkalian P(Z < z) = 0.8997. Cari nilai x jika min = 70 dan sisihan piawai = 12.
In a normal distribution, z = 1.28 corresponds to a probability of P(Z < z) = 0.8997. Find the x-value if the mean is 70 and the standard deviation is 12.

4. Masa yang diambil untuk penghantaran makanan oleh sebuah syarikat bertaburan secara normal dengan **min 35** minit dan **varians 20.25.**
The time taken for food delivery by a company is normally distributed with ***mean of 35*** *minutes and a* ***variance of 20.25 minutes****.*

PILIH MAKLUMAT

a) **Cari kebarangkalian** bahawa masa untuk penghantaran makanan itu lebih daripada **44 minit**.
Find the probability that the time for food delivery ***is more than 44 minutes*** .

KENAL

b) Diberi bahawa **56%** daripada masa yang diambil untuk penghantaran makanan **adalah kurang daripada k minit**.Berdasarkan situasi tersebut, lakar graf taburan normal piawai dan cari nilai k.
Given that ***56%*** *of the time taken for food delivery* ***is less than k minutes****. Based on the situation sketch the standard normal distribution graph and find the value of k.*

KENAL

Jawapan/answer

5. Jisim pelajar sebuah universiti adalah bertaburan secara normal dengan min m kg dan varians 25 kg. Cari
The mass of students in a university is normally distributed with a mean of m kg and variance of 25 kg. Find

PILIH MAKLUMAT

a) nilai m, jika 8% daripada pelajar-pelajar itu mempunyai jisim melebihi 70 kg.
the value of m, if 8 % of the students have mass more than 70 kg.

KENAL

b) kebarangkalian bahawa seorang pelajar yang dipilih secara rawak dari universiti itu mempunyai jisim kurang daripada 50 kg.
the probability that a student chosen at random from the university will has a mass less than 50 kg

KENAL

Jawapan/answer

THE UPPER TAIL PROBABILITY $Q(z)$ FOR THE NORMAL DISTRIBUTION N(0, 1)

KEBARANGKALIAN HUJUNG ATAS $Q(z)$ BAGI TABURAN NORMAL N(0, 1)

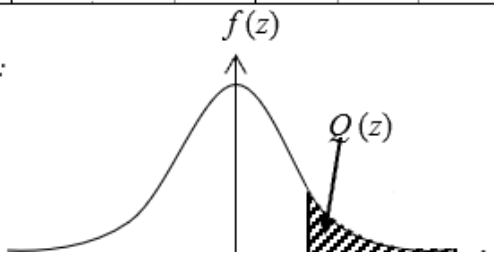
z	0	1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	9
											Minus / *Tolak*								
0.0	.5000	.4960	.4920	.4880	.4840	.4801	.4761	.4721	.4681	.4641	4	8	12	16	20	24	28	32	36
0.1	.4602	.4562	.4522	.4483	.4443	.4404	.4364	.4325	.4286	.4247	4	8	12	16	20	24	28	32	36
0.2	.4207	.4168	.4219	.4090	.4052	.4013	.3974	.3936	.3897	.3859	4	8	12	15	19	23	27	31	35
0.3	.3821	.3783	.3745	.3707	.3669	.3632	.3594	.3557	.3520	.3483	4	7	11	15	19	22	26	30	34
0.4	.3446	.3409	.3372	.3336	.3300	.3264	.3228	.3192	.3156	.3121	4	7	11	15	18	22	25	29	32
0.5	.3085	.3050	.3015	.2981	.2946	.2912	.2877	.2843	.2810	.2776	3	7	10	14	17	20	24	27	31
0.6	.2743	.2709	.2676	.2643	.2611	.2578	.2546	.2514	.2483	.2451	3	7	10	13	16	19	23	26	29
0.7	.2420	.2389	.2358	.2327	.2296	.2266	.2236	.2206	.2177	.2148	3	6	9	12	15	18	21	24	27
0.8	.2119	.2090	.2061	.2033	.2005	.1977	.1949	.1922	.1894	.1867	3	5	8	11	14	16	19	22	25
0.9	.1841	.1814	.1788	.1762	.1736	.1711	.1685	.1660	.1635	.1611	3	5	8	10	13	15	18	20	23
1.0	.1587	.1562	.1539	.1515	.1492	.1469	.1446	.1423	.1401	.1379	2	5	7	9	12	14	16	19	21
1.1	.1357	.1335	.1314	.1292	.1271	.1251	.1230	.1210	.1190	.1170	2	4	6	8	10	12	14	16	18
1.2	.1151	.1131	.1112	.1093	.1075	.1056	.1038	.1020	.1003	.0985	2	4	6	7	9	11	13	15	17
1.3	.0968	.0951	.0934	.0918	.0901	.0885	.0869	.0853	.0838	.0823	2	3	5	6	8	10	11	13	14
1.4	.0808	.0793	.0778	.0764	.0749	.0735	.0721	.0708	.0694	.0681	1	3	4	6	7	8	10	11	13
1.5	.0668	.0655	.0643	.0630	.0618	.0606	.0594	.0582	.0571	.0559	1	2	4	5	6	7	8	10	11
1.6	.0548	.0537	.0526	.0516	.0505	.0495	.0485	.0475	.0465	.0455	1	2	3	4	5	6	7	8	9
1.7	.0446	.0436	.0427	.0418	.0409	.0401	.0392	.0384	.0375	.0367	1	2	3	4	4	5	6	7	8
1.8	.0359	.0351	.0344	.0336	.0329	.0322	.0314	.0307	.0301	.0294	1	1	2	3	4	4	5	6	6
1.9	.0287	.0281	.0274	.0268	.0262	.0256	.0250	.0244	.0239	.0233	1	1	2	2	3	4	4	5	5
2.0	.0228	.0222	.0217	.0212	.0207	.0202	.0197	.0192	.0188	.0183	0	1	1	2	2	3	3	4	4
2.1	.0179	.0174	.0170	.0166	.0162	.0158	.0154	.0150	.0146	.0143	0	1	1	2	2	2	3	3	4
2.2	.0139	.0136	.0132	.0129	.0125	.0122	.0119	.0116	.0113	.0110	0	1	1	1	2	2	2	3	3
2.3	.0107	.0104	.0102								0	1	1	1	1	2	2	2	2
				.$0^2$990	.$0^2$964	.$0^2$939	.$0^2$914				3	5	8	10	13	15	18	20	23
								.$0^2$889	.$0^2$866	.$0^2$842	2	5	7	9	12	14	16	16	21
2.4	.$0^2$820	.$0^2$798	.$0^2$776	.$0^2$755	.$0^2$734						2	4	6	8	11	13	15	17	19
						.$0^2$714	.$0^2$695	.$0^2$676	.$0^2$657	.$0^2$639	2	4	6	7	9	11	13	15	17
2.5	.$0^2$621	.$0^2$604	.$0^2$587	.$0^2$570	.$0^2$554	.$0^2$539	.$0^2$523	.$0^2$508	.$0^2$494	.$0^2$480	2	3	5	6	8	9	11	12	14
2.6	.$0^2$466	.$0^2$453	.$0^2$440	.$0^2$427	.$0^2$415	.$0^2$402	.$0^2$391	.$0^2$379	.$0^2$368	.$0^2$357	1	2	3	5	6	7	9	9	10
2.7	.$0^2$347	.$0^2$336	.$0^2$326	.$0^2$317	.$0^2$307	.$0^2$298	.$0^2$289	.$0^2$280	.$0^2$272	.$0^2$264	1	2	3	4	5	6	7	8	9
2.8	.$0^2$256	.$0^2$248	.$0^2$240	.$0^2$233	.$0^2$226	.$0^2$219	.$0^2$212	.$0^2$205	.$0^2$199	.$0^2$193	1	1	2	3	4	4	5	6	6
2.9	.$0^2$187	.$0^2$181	.$0^2$175	.$0^2$169	.$0^2$164	.$0^2$159	.$0^2$154	.$0^2$149	.$0^2$144	.$0^2$139	0	1	1	2	2	3	3	4	4
3.0	.$0^2$135	.$0^2$131	.$0^2$126	.$0^2$122	.$0^2$118	.$0^2$114	.$0^2$111	.$0^2$107	.$0^2$104	.$0^2$100	0	1	1	2	2	2	3	3	4

For negative z use relation
Bagi z negatif guna hubungan:

$$Q(z) = 1 - Q(-z) = P(-z)$$

$$f(z) = \frac{1}{\sqrt{2\pi}} \exp\left(-\frac{1}{2}z^2\right)$$

$$Q(z) = \int_{\infty}^{} f(z)\, dz$$



Example / *Contoh*:
If $X \sim$ N(0, 1), then
Jika $X \sim$ N(0, 1), *maka*
$P(X > k) = Q(k)$
$P(X > 2.1) = Q(2.1) = 0.0179$

NOTES