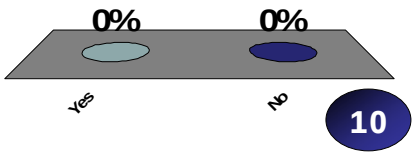
Laplace Transforms

Clicker questions

Is the Laplace transform a linear transformation?

✔1. Yes
2. No



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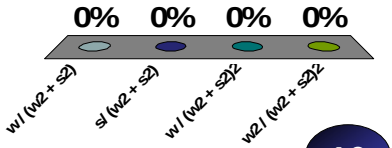
What is the Laplace transform of $\sin(\omega t)$?

✔1. $\omega / (\omega^2 + s^2)$
2. $s / (\omega^2 + s^2)$
3. $\omega / (\omega^2 + s^2)^2$
4. $\omega^2 / (\omega^2 + s^2)^2$



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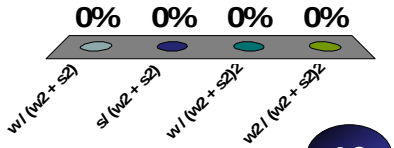
What is the Laplace transform of $\cos(\omega t)$?

1. $\omega / (\omega^2 + s^2)$
✔2. $s / (\omega^2 + s^2)$
3. $\omega / (\omega^2 + s^2)^2$
4. $\omega^2 / (\omega^2 + s^2)^2$



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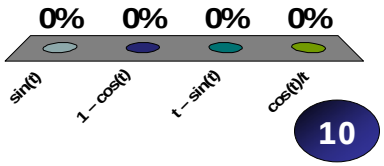
What is the inverse Laplace transform of $1/(s(s^2+1))$?

1. $\sin(t)$
2. ✓ $1 - \cos(t)$
3. $t - \sin(t)$
4. $\cos(t)/t$



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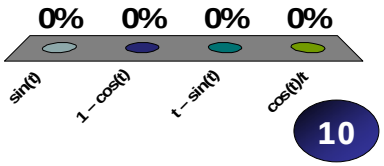
What is the inverse Laplace transform of $1/(s^2(s^2+1))$?

1. $\sin(t)$
2. $1 - \cos(t)$
3. ✓ $t - \sin(t)$
4. $\cos(t)/t$



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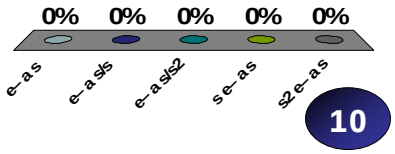
What is the Laplace transform of $H(t\text{-}a)$?

1. e^{-as}
2. ✓ e^{-as}/s
3. e^{-as}/s^2
4. $s\, e^{-as}$
5. $s^2\, e^{-as}$



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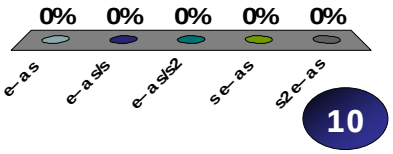
What is the Laplace transform of $\delta(t\text{-}a)$?

1. ✓ e^{-as}
2. e^{-as}/s
3. e^{-as}/s^2
4. $s\, e^{-as}$
5. $s^2\, e^{-as}$



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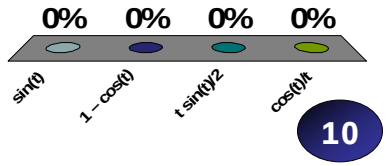
What is the inverse Laplace transform of $s/(s^2+1)^2$?

1. $\sin(t)$
2. $1 - \cos(t)$
3. ✓ $t \sin(t)/2$
4. $\cos(t)/t$



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