# Questions

In the investigation, assume all constants of integration are zero and each integration and differentiation is done with respect to the variable x.

Which graph …

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| **Statement** | **Graph number** |
| is the integral of -1/x2? |  |
| is the gradient function of 1/x? |  |
| is the integral of sin(x)? |  |
| is the gradient function of cos(x)? |  |
| is the gradient function of -ln(x)? |  |
| is the integral of sin($\frac{1}{2}$x)? |  |
| is the gradient function of sin2(x)? |  |
| is the integral of ex? |  |
| is the gradient function of sin(x) + 2x? |  |
| is the integral of e2x? |  |
| is the gradient function of e2x? |  |
| is the integral of 1/x? |  |
| is the gradient function of tan(x)? |  |
| is the integral of sec(x)tan(x)? |  |
| is the integral of cos(x)? |  |
| is the gradient function of -ln(cos(x))? |  |

# Graphs

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| **A.** |
| **B.** |
| **C.** |

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| **D.** |
| **E.** |
| **F.** |

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| **G.** |
| **H.** |
| **I.** |

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| **J.** |
| **K.** |
| **L.** |

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| **M.** |
| **N.** |
| **O.** |

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| --- |
| **P.** |

# Solutions

|  |  |
| --- | --- |
| **Statement** | **Graph number** |
| is the integral of -1/x2? | **A** |
| has the gradient function of 1/x? | **I** |
| is the integral of sin(x)? | **B** |
| is the gradient function of cos(x)? | **D** |
| is the gradient function of -ln(x)? | **G** |
| is the integral of sin($\frac{1}{2}$x)? | **L** |
| is the gradient function of sin2(x)? | **J** |
| is the integral of ex? | **C** |
| is the gradient function of sin(x) + 2x? | **P** |
| is the integral of e2x? | **K** |
| is the gradient function of e2x? | **H** |
| is the integral of 1/x? | **E** |
| is the gradient function of tan(x)? | **M** |
| is the integral of sec(x)tan(x)? | **O** |
| is the integral of cos(x)? | **N** |
| is the gradient function of -ln(cos(x))? | **F** |