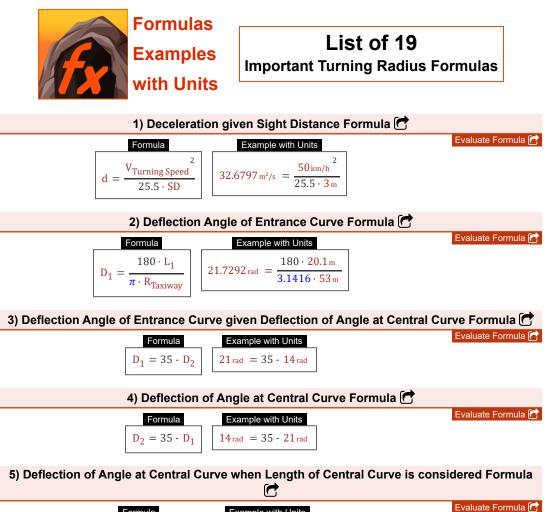
Important Turning Radius Formulas PDF



Formula	Example with Units
$\mathbf{D} = \frac{180 \cdot \mathbf{L2}}{\mathbf{L}}$	$14.0993 \text{rad} = \frac{180 \cdot 25.1 \text{m}}{}$
$D_2 = \frac{\pi \cdot R2}{\pi \cdot R2}$	$14.0995 \text{rad} = \frac{3.1416 \cdot 102 \text{m}}{3.1416 \cdot 102 \text{m}}$

6) Distance between Midway Points of Main Gears and Edge of Taxiway Pavements Formula

Formula

$$D_{Midway} = \left(0.5 \cdot T_{Width}\right) \cdot \left(0.388 \cdot \frac{W^2}{R_{Taxiway}}\right)$$
Example with Units

$$17.7897 \text{ m} = \left(0.5 \cdot 45.1 \text{ m}\right) - \left(0.388 \cdot \frac{25.5 \text{ m}^2}{53 \text{ m}}\right)$$



FormulaExample with UnitsEvaluate Formula
$$R_{Taxiway} = \frac{0.388 \cdot W^2}{(0.5 \cdot T_{Width}) - D_{Midway}}$$
 $52.8925 \text{ m} = \frac{0.388 \cdot 25.5 \text{ m}^2}{(0.5 \cdot 45.1 \text{ m}) - 17.78 \text{ m}}$

8) Length of Central Curve Formula 🕝

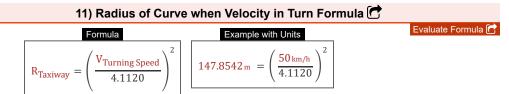
FormulaExample with UnitsL2 =
$$\frac{\pi \cdot \text{R2} \cdot \text{D}_2}{180}$$
24.9233 m = $\frac{3.1416 \cdot 102 \text{ m} \cdot 14 \text{ rad}}{180}$

9) Length of Entrance Curve when Deflection Angle of Entrance Curve is considered Formula

FormulaExample with UnitsEvaluate Formula
$$L_1 = \frac{\pi \cdot D_1 \cdot R_{Taxiway}}{180}$$
 $19.4255 \text{ m} = \frac{3.1416 \cdot 21 \text{ rad} \cdot 53 \text{ m}}{180}$

10) Radius of Central Curve given Length of Central Curve Formula 🕝

Formula	Example with Units	
$180 \cdot L2$	$102.7231 \text{m} = \frac{180 \cdot 25.1 \text{m}}{10000000000000000000000000000000000$	
$\mathbf{R}\mathbf{Z} = \frac{\mathbf{\pi} \cdot \mathbf{D}_2}{\mathbf{\pi} \cdot \mathbf{D}_2}$	$102.7231 \text{m} = \frac{3.1416 \cdot 14 \text{ rad}}{3.1416 \cdot 14 \text{ rad}}$	





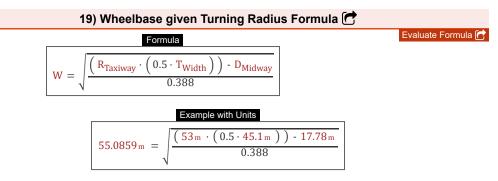
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Evaluate Formula

Evaluate Formula

12) Radius of Entrance Curve when Deflection Angle of Entrance Curve is considered Formula





Variables used in list of Turning Radius Formulas above

- d Deceleration (Square Meter per Second)
- D₁ Deflection Angle of Entrance Curve (Radian)
- **D**₂ Deflection Angle of Central Curve (Radian)
- D_{Midway} Distance between Midway Points (Meter)
- L1 Length of Entrance Curve (Meter)
- L2 Length of Central Curve (Meter)
- RTaxiway Radius of Curve for Taxiway (Meter)
- R2 Radius of Central Curve (Meter)
- SD Sight Distance (Meter)
- Twidth Taxiway Width (Meter)
- V_{Turning Speed} Turning Speed of Aircraft (Kilometer per Hour)
- W Wheelbase (Meter)
- **µ**Friction Coefficient of Friction

Constants, Functions, Measurements used in list of Turning Radius Formulas above

- constant(s): pi,
 3.14159265358979323846264338327950288
 Archimedes' constant
- Functions: sqrt, sqrt(Number) A square root function is a function that takes a non-negative number as an input and returns the square root of the given input number.
- Measurement: Length in Meter (m) Length Unit Conversion
- Measurement: Speed in Kilometer per Hour (km/h)

Speed Unit Conversion 🕝

- Measurement: Angle in Radian (rad) Angle Unit Conversion
- Measurement: Kinematic Viscosity in Square Meter per Second (m²/s) Kinematic Viscosity Unit Conversion



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