| | [**Overview**](http://docs.google.com/overview-summary.html) | [**Package**](http://docs.google.com/package-summary.html) | [**Class**](http://docs.google.com/java/awt/geom/AffineTransform.html) | **Use** | [**Tree**](http://docs.google.com/package-tree.html) | [**Deprecated**](http://docs.google.com/deprecated-list.html) | [**Index**](http://docs.google.com/index-files/index-1.html) | [**Help**](http://docs.google.com/help-doc.html) | | --- | --- | --- | --- | --- | --- | --- | --- | | | ***Java™ Platform***  ***Standard Ed. 6*** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| PREV   NEXT | [**FRAMES**](http://docs.google.com/index.html?java/awt/geom//class-useAffineTransform.html)    [**NO FRAMES**](http://docs.google.com/AffineTransform.html)     [**All Classes**](http://docs.google.com/allclasses-noframe.html) |

**Uses of Class**

**java.awt.geom.AffineTransform**

| Packages that use [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) | |
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| [**java.awt**](#3znysh7) | Contains all of the classes for creating user interfaces and for painting graphics and images. |
| [**java.awt.font**](#2et92p0) | Provides classes and interface relating to fonts. |
| [**java.awt.geom**](#tyjcwt) | Provides the Java 2D classes for defining and performing operations on objects related to two-dimensional geometry. |
| [**java.awt.image**](#3dy6vkm) | Provides classes for creating and modifying images. |
| [**java.awt.image.renderable**](#1t3h5sf) | Provides classes and interfaces for producing rendering-independent images. |

| Uses of [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) in [java.awt](http://docs.google.com/java/awt/package-summary.html) | |
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| Methods in [java.awt](http://docs.google.com/java/awt/package-summary.html) that return [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) | |
| --- | --- |
| abstract  [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) | **GraphicsConfiguration.**[**getDefaultTransform**](http://docs.google.com/java/awt/GraphicsConfiguration.html#getDefaultTransform())()            Returns the default [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) for this GraphicsConfiguration. |
| abstract  [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) | **GraphicsConfiguration.**[**getNormalizingTransform**](http://docs.google.com/java/awt/GraphicsConfiguration.html#getNormalizingTransform())()            Returns a AffineTransform that can be concatenated with the default AffineTransform of a GraphicsConfiguration so that 72 units in user space equals 1 inch in device space. |
| [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) | **MultipleGradientPaint.**[**getTransform**](http://docs.google.com/java/awt/MultipleGradientPaint.html#getTransform())()            Returns a copy of the transform applied to the gradient. |
| abstract  [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) | **Graphics2D.**[**getTransform**](http://docs.google.com/java/awt/Graphics2D.html#getTransform())()            Returns a copy of the current Transform in the Graphics2D context. |
| [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) | **Font.**[**getTransform**](http://docs.google.com/java/awt/Font.html#getTransform())()            Returns a copy of the transform associated with this Font. |

| Methods in [java.awt](http://docs.google.com/java/awt/package-summary.html) with parameters of type [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) | |
| --- | --- |
| [PaintContext](http://docs.google.com/java/awt/PaintContext.html) | **LinearGradientPaint.**[**createContext**](http://docs.google.com/java/awt/LinearGradientPaint.html#createContext(java.awt.image.ColorModel,%20java.awt.Rectangle,%20java.awt.geom.Rectangle2D,%20java.awt.geom.AffineTransform,%20java.awt.RenderingHints))([ColorModel](http://docs.google.com/java/awt/image/ColorModel.html) cm, [Rectangle](http://docs.google.com/java/awt/Rectangle.html) deviceBounds, [Rectangle2D](http://docs.google.com/java/awt/geom/Rectangle2D.html) userBounds, [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) transform, [RenderingHints](http://docs.google.com/java/awt/RenderingHints.html) hints)            Creates and returns a [PaintContext](http://docs.google.com/java/awt/PaintContext.html) used to generate the color pattern. |
| [PaintContext](http://docs.google.com/java/awt/PaintContext.html) | **TexturePaint.**[**createContext**](http://docs.google.com/java/awt/TexturePaint.html#createContext(java.awt.image.ColorModel,%20java.awt.Rectangle,%20java.awt.geom.Rectangle2D,%20java.awt.geom.AffineTransform,%20java.awt.RenderingHints))([ColorModel](http://docs.google.com/java/awt/image/ColorModel.html) cm, [Rectangle](http://docs.google.com/java/awt/Rectangle.html) deviceBounds, [Rectangle2D](http://docs.google.com/java/awt/geom/Rectangle2D.html) userBounds, [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) xform, [RenderingHints](http://docs.google.com/java/awt/RenderingHints.html) hints)            Creates and returns a context used to generate the color pattern. |
| [PaintContext](http://docs.google.com/java/awt/PaintContext.html) | **SystemColor.**[**createContext**](http://docs.google.com/java/awt/SystemColor.html#createContext(java.awt.image.ColorModel,%20java.awt.Rectangle,%20java.awt.geom.Rectangle2D,%20java.awt.geom.AffineTransform,%20java.awt.RenderingHints))([ColorModel](http://docs.google.com/java/awt/image/ColorModel.html) cm, [Rectangle](http://docs.google.com/java/awt/Rectangle.html) r, [Rectangle2D](http://docs.google.com/java/awt/geom/Rectangle2D.html) r2d, [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) xform, [RenderingHints](http://docs.google.com/java/awt/RenderingHints.html) hints)            Creates and returns a PaintContext used to generate a solid color pattern. |
| [PaintContext](http://docs.google.com/java/awt/PaintContext.html) | **RadialGradientPaint.**[**createContext**](http://docs.google.com/java/awt/RadialGradientPaint.html#createContext(java.awt.image.ColorModel,%20java.awt.Rectangle,%20java.awt.geom.Rectangle2D,%20java.awt.geom.AffineTransform,%20java.awt.RenderingHints))([ColorModel](http://docs.google.com/java/awt/image/ColorModel.html) cm, [Rectangle](http://docs.google.com/java/awt/Rectangle.html) deviceBounds, [Rectangle2D](http://docs.google.com/java/awt/geom/Rectangle2D.html) userBounds, [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) transform, [RenderingHints](http://docs.google.com/java/awt/RenderingHints.html) hints)            Creates and returns a [PaintContext](http://docs.google.com/java/awt/PaintContext.html) used to generate the color pattern. |
| [PaintContext](http://docs.google.com/java/awt/PaintContext.html) | **GradientPaint.**[**createContext**](http://docs.google.com/java/awt/GradientPaint.html#createContext(java.awt.image.ColorModel,%20java.awt.Rectangle,%20java.awt.geom.Rectangle2D,%20java.awt.geom.AffineTransform,%20java.awt.RenderingHints))([ColorModel](http://docs.google.com/java/awt/image/ColorModel.html) cm, [Rectangle](http://docs.google.com/java/awt/Rectangle.html) deviceBounds, [Rectangle2D](http://docs.google.com/java/awt/geom/Rectangle2D.html) userBounds, [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) xform, [RenderingHints](http://docs.google.com/java/awt/RenderingHints.html) hints)            Creates and returns a context used to generate the color pattern. |
| [PaintContext](http://docs.google.com/java/awt/PaintContext.html) | **Paint.**[**createContext**](http://docs.google.com/java/awt/Paint.html#createContext(java.awt.image.ColorModel,%20java.awt.Rectangle,%20java.awt.geom.Rectangle2D,%20java.awt.geom.AffineTransform,%20java.awt.RenderingHints))([ColorModel](http://docs.google.com/java/awt/image/ColorModel.html) cm, [Rectangle](http://docs.google.com/java/awt/Rectangle.html) deviceBounds, [Rectangle2D](http://docs.google.com/java/awt/geom/Rectangle2D.html) userBounds, [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) xform, [RenderingHints](http://docs.google.com/java/awt/RenderingHints.html) hints)            Creates and returns a [PaintContext](http://docs.google.com/java/awt/PaintContext.html) used to generate the color pattern. |
| [PaintContext](http://docs.google.com/java/awt/PaintContext.html) | **Color.**[**createContext**](http://docs.google.com/java/awt/Color.html#createContext(java.awt.image.ColorModel,%20java.awt.Rectangle,%20java.awt.geom.Rectangle2D,%20java.awt.geom.AffineTransform,%20java.awt.RenderingHints))([ColorModel](http://docs.google.com/java/awt/image/ColorModel.html) cm, [Rectangle](http://docs.google.com/java/awt/Rectangle.html) r, [Rectangle2D](http://docs.google.com/java/awt/geom/Rectangle2D.html) r2d, [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) xform, [RenderingHints](http://docs.google.com/java/awt/RenderingHints.html) hints)            Creates and returns a [PaintContext](http://docs.google.com/java/awt/PaintContext.html) used to generate a solid color pattern. |
| [Font](http://docs.google.com/java/awt/Font.html) | **Font.**[**deriveFont**](http://docs.google.com/java/awt/Font.html#deriveFont(java.awt.geom.AffineTransform))([AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) trans)            Creates a new Font object by replicating the current Font object and applying a new transform to it. |
| [Font](http://docs.google.com/java/awt/Font.html) | **Font.**[**deriveFont**](http://docs.google.com/java/awt/Font.html#deriveFont(int,%20java.awt.geom.AffineTransform))(int style, [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) trans)            Creates a new Font object by replicating this Font object and applying a new style and transform. |
| abstract  boolean | **Graphics2D.**[**drawImage**](http://docs.google.com/java/awt/Graphics2D.html#drawImage(java.awt.Image,%20java.awt.geom.AffineTransform,%20java.awt.image.ImageObserver))([Image](http://docs.google.com/java/awt/Image.html) img, [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) xform, [ImageObserver](http://docs.google.com/java/awt/image/ImageObserver.html) obs)            Renders an image, applying a transform from image space into user space before drawing. |
| abstract  void | **Graphics2D.**[**drawRenderableImage**](http://docs.google.com/java/awt/Graphics2D.html#drawRenderableImage(java.awt.image.renderable.RenderableImage,%20java.awt.geom.AffineTransform))([RenderableImage](http://docs.google.com/java/awt/image/renderable/RenderableImage.html) img, [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) xform)            Renders a [RenderableImage](http://docs.google.com/java/awt/image/renderable/RenderableImage.html), applying a transform from image space into user space before drawing. |
| abstract  void | **Graphics2D.**[**drawRenderedImage**](http://docs.google.com/java/awt/Graphics2D.html#drawRenderedImage(java.awt.image.RenderedImage,%20java.awt.geom.AffineTransform))([RenderedImage](http://docs.google.com/java/awt/image/RenderedImage.html) img, [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) xform)            Renders a [RenderedImage](http://docs.google.com/java/awt/image/RenderedImage.html), applying a transform from image space into user space before drawing. |
| [PathIterator](http://docs.google.com/java/awt/geom/PathIterator.html) | **Polygon.**[**getPathIterator**](http://docs.google.com/java/awt/Polygon.html#getPathIterator(java.awt.geom.AffineTransform))([AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) at)            Returns an iterator object that iterates along the boundary of this Polygon and provides access to the geometry of the outline of this Polygon. |
| [PathIterator](http://docs.google.com/java/awt/geom/PathIterator.html) | **Shape.**[**getPathIterator**](http://docs.google.com/java/awt/Shape.html#getPathIterator(java.awt.geom.AffineTransform))([AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) at)            Returns an iterator object that iterates along the Shape boundary and provides access to the geometry of the Shape outline. |
| [PathIterator](http://docs.google.com/java/awt/geom/PathIterator.html) | **Polygon.**[**getPathIterator**](http://docs.google.com/java/awt/Polygon.html#getPathIterator(java.awt.geom.AffineTransform,%20double))([AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) at, double flatness)            Returns an iterator object that iterates along the boundary of the Shape and provides access to the geometry of the outline of the Shape. |
| [PathIterator](http://docs.google.com/java/awt/geom/PathIterator.html) | **Shape.**[**getPathIterator**](http://docs.google.com/java/awt/Shape.html#getPathIterator(java.awt.geom.AffineTransform,%20double))([AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) at, double flatness)            Returns an iterator object that iterates along the Shape boundary and provides access to a flattened view of the Shape outline geometry. |
| abstract  void | **Graphics2D.**[**setTransform**](http://docs.google.com/java/awt/Graphics2D.html#setTransform(java.awt.geom.AffineTransform))([AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) Tx)            Overwrites the Transform in the Graphics2D context. |
| abstract  void | **Graphics2D.**[**transform**](http://docs.google.com/java/awt/Graphics2D.html#transform(java.awt.geom.AffineTransform))([AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) Tx)            Composes an AffineTransform object with the Transform in this Graphics2D according to the rule last-specified-first-applied. |

| Constructors in [java.awt](http://docs.google.com/java/awt/package-summary.html) with parameters of type [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) | |
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| [**LinearGradientPaint**](http://docs.google.com/java/awt/LinearGradientPaint.html#LinearGradientPaint(java.awt.geom.Point2D,%20java.awt.geom.Point2D,%20float%5B%5D,%20java.awt.Color%5B%5D,%20java.awt.MultipleGradientPaint.CycleMethod,%20java.awt.MultipleGradientPaint.ColorSpaceType,%20java.awt.geom.AffineTransform))([Point2D](http://docs.google.com/java/awt/geom/Point2D.html) start, [Point2D](http://docs.google.com/java/awt/geom/Point2D.html) end, float[] fractions, [Color](http://docs.google.com/java/awt/Color.html)[] colors, [MultipleGradientPaint.CycleMethod](http://docs.google.com/java/awt/MultipleGradientPaint.CycleMethod.html) cycleMethod, [MultipleGradientPaint.ColorSpaceType](http://docs.google.com/java/awt/MultipleGradientPaint.ColorSpaceType.html) colorSpace, [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) gradientTransform)            Constructs a LinearGradientPaint. |
| [**RadialGradientPaint**](http://docs.google.com/java/awt/RadialGradientPaint.html#RadialGradientPaint(java.awt.geom.Point2D,%20float,%20java.awt.geom.Point2D,%20float%5B%5D,%20java.awt.Color%5B%5D,%20java.awt.MultipleGradientPaint.CycleMethod,%20java.awt.MultipleGradientPaint.ColorSpaceType,%20java.awt.geom.AffineTransform))([Point2D](http://docs.google.com/java/awt/geom/Point2D.html) center, float radius, [Point2D](http://docs.google.com/java/awt/geom/Point2D.html) focus, float[] fractions, [Color](http://docs.google.com/java/awt/Color.html)[] colors, [MultipleGradientPaint.CycleMethod](http://docs.google.com/java/awt/MultipleGradientPaint.CycleMethod.html) cycleMethod, [MultipleGradientPaint.ColorSpaceType](http://docs.google.com/java/awt/MultipleGradientPaint.ColorSpaceType.html) colorSpace, [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) gradientTransform)            Constructs a RadialGradientPaint. |

| Uses of [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) in [java.awt.font](http://docs.google.com/java/awt/font/package-summary.html) | |
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| Methods in [java.awt.font](http://docs.google.com/java/awt/font/package-summary.html) that return [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) | |
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| abstract  [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) | **GlyphVector.**[**getGlyphTransform**](http://docs.google.com/java/awt/font/GlyphVector.html#getGlyphTransform(int))(int glyphIndex)            Returns the transform of the specified glyph within this GlyphVector. |
| [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) | **TransformAttribute.**[**getTransform**](http://docs.google.com/java/awt/font/TransformAttribute.html#getTransform())()            Returns a copy of the wrapped transform. |
| [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) | **FontRenderContext.**[**getTransform**](http://docs.google.com/java/awt/font/FontRenderContext.html#getTransform())()            Gets the transform that is used to scale typographical points to pixels in this FontRenderContext. |

| Methods in [java.awt.font](http://docs.google.com/java/awt/font/package-summary.html) with parameters of type [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) | |
| --- | --- |
| [Shape](http://docs.google.com/java/awt/Shape.html) | **ShapeGraphicAttribute.**[**getOutline**](http://docs.google.com/java/awt/font/ShapeGraphicAttribute.html#getOutline(java.awt.geom.AffineTransform))([AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) tx)            Return a [Shape](http://docs.google.com/java/awt/Shape.html) that represents the region that this ShapeGraphicAttribute renders. |
| [Shape](http://docs.google.com/java/awt/Shape.html) | **TextLayout.**[**getOutline**](http://docs.google.com/java/awt/font/TextLayout.html#getOutline(java.awt.geom.AffineTransform))([AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) tx)            Returns a Shape representing the outline of this TextLayout. |
| [Shape](http://docs.google.com/java/awt/Shape.html) | **GraphicAttribute.**[**getOutline**](http://docs.google.com/java/awt/font/GraphicAttribute.html#getOutline(java.awt.geom.AffineTransform))([AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) tx)            Return a [Shape](http://docs.google.com/java/awt/Shape.html) that represents the region that this GraphicAttribute renders. |
| abstract  void | **GlyphVector.**[**setGlyphTransform**](http://docs.google.com/java/awt/font/GlyphVector.html#setGlyphTransform(int,%20java.awt.geom.AffineTransform))(int glyphIndex, [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) newTX)            Sets the transform of the specified glyph within this GlyphVector. |

| Constructors in [java.awt.font](http://docs.google.com/java/awt/font/package-summary.html) with parameters of type [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) | |
| --- | --- |
| [**FontRenderContext**](http://docs.google.com/java/awt/font/FontRenderContext.html#FontRenderContext(java.awt.geom.AffineTransform,%20boolean,%20boolean))([AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) tx, boolean isAntiAliased, boolean usesFractionalMetrics)            Constructs a FontRenderContext object from an optional [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) and two boolean values that determine if the newly constructed object has anti-aliasing or fractional metrics. |
| [**FontRenderContext**](http://docs.google.com/java/awt/font/FontRenderContext.html#FontRenderContext(java.awt.geom.AffineTransform,%20java.lang.Object,%20java.lang.Object))([AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) tx, [Object](http://docs.google.com/java/lang/Object.html) aaHint, [Object](http://docs.google.com/java/lang/Object.html) fmHint)            Constructs a FontRenderContext object from an optional [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) and two Object values that determine if the newly constructed object has anti-aliasing or fractional metrics. |
| [**TransformAttribute**](http://docs.google.com/java/awt/font/TransformAttribute.html#TransformAttribute(java.awt.geom.AffineTransform))([AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) transform)            Wraps the specified transform. |

| Uses of [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) in [java.awt.geom](http://docs.google.com/java/awt/geom/package-summary.html) | |
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| Methods in [java.awt.geom](http://docs.google.com/java/awt/geom/package-summary.html) that return [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) | |
| --- | --- |
| [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) | **AffineTransform.**[**createInverse**](http://docs.google.com/java/awt/geom/AffineTransform.html#createInverse())()            Returns an AffineTransform object representing the inverse transformation. |
| static [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) | **AffineTransform.**[**getQuadrantRotateInstance**](http://docs.google.com/java/awt/geom/AffineTransform.html#getQuadrantRotateInstance(int))(int numquadrants)            Returns a transform that rotates coordinates by the specified number of quadrants. |
| static [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) | **AffineTransform.**[**getQuadrantRotateInstance**](http://docs.google.com/java/awt/geom/AffineTransform.html#getQuadrantRotateInstance(int,%20double,%20double))(int numquadrants, double anchorx, double anchory)            Returns a transform that rotates coordinates by the specified number of quadrants around the specified anchor point. |
| static [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) | **AffineTransform.**[**getRotateInstance**](http://docs.google.com/java/awt/geom/AffineTransform.html#getRotateInstance(double))(double theta)            Returns a transform representing a rotation transformation. |
| static [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) | **AffineTransform.**[**getRotateInstance**](http://docs.google.com/java/awt/geom/AffineTransform.html#getRotateInstance(double,%20double))(double vecx, double vecy)            Returns a transform that rotates coordinates according to a rotation vector. |
| static [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) | **AffineTransform.**[**getRotateInstance**](http://docs.google.com/java/awt/geom/AffineTransform.html#getRotateInstance(double,%20double,%20double))(double theta, double anchorx, double anchory)            Returns a transform that rotates coordinates around an anchor point. |
| static [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) | **AffineTransform.**[**getRotateInstance**](http://docs.google.com/java/awt/geom/AffineTransform.html#getRotateInstance(double,%20double,%20double,%20double))(double vecx, double vecy, double anchorx, double anchory)            Returns a transform that rotates coordinates around an anchor point accordinate to a rotation vector. |
| static [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) | **AffineTransform.**[**getScaleInstance**](http://docs.google.com/java/awt/geom/AffineTransform.html#getScaleInstance(double,%20double))(double sx, double sy)            Returns a transform representing a scaling transformation. |
| static [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) | **AffineTransform.**[**getShearInstance**](http://docs.google.com/java/awt/geom/AffineTransform.html#getShearInstance(double,%20double))(double shx, double shy)            Returns a transform representing a shearing transformation. |
| static [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) | **AffineTransform.**[**getTranslateInstance**](http://docs.google.com/java/awt/geom/AffineTransform.html#getTranslateInstance(double,%20double))(double tx, double ty)            Returns a transform representing a translation transformation. |

| Methods in [java.awt.geom](http://docs.google.com/java/awt/geom/package-summary.html) with parameters of type [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) | |
| --- | --- |
| void | **AffineTransform.**[**concatenate**](http://docs.google.com/java/awt/geom/AffineTransform.html#concatenate(java.awt.geom.AffineTransform))([AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) Tx)            Concatenates an AffineTransform Tx to this AffineTransform Cx in the most commonly useful way to provide a new user space that is mapped to the former user space by Tx. |
| [Area](http://docs.google.com/java/awt/geom/Area.html) | **Area.**[**createTransformedArea**](http://docs.google.com/java/awt/geom/Area.html#createTransformedArea(java.awt.geom.AffineTransform))([AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) t)            Creates a new Area object that contains the same geometry as this Area transformed by the specified AffineTransform. |
| [Shape](http://docs.google.com/java/awt/Shape.html) | **Path2D.**[**createTransformedShape**](http://docs.google.com/java/awt/geom/Path2D.html#createTransformedShape(java.awt.geom.AffineTransform))([AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) at)            Returns a new Shape representing a transformed version of this Path2D. |
| [PathIterator](http://docs.google.com/java/awt/geom/PathIterator.html) | **Rectangle2D.**[**getPathIterator**](http://docs.google.com/java/awt/geom/Rectangle2D.html#getPathIterator(java.awt.geom.AffineTransform))([AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) at)            Returns an iteration object that defines the boundary of this Rectangle2D. |
| [PathIterator](http://docs.google.com/java/awt/geom/PathIterator.html) | **RoundRectangle2D.**[**getPathIterator**](http://docs.google.com/java/awt/geom/RoundRectangle2D.html#getPathIterator(java.awt.geom.AffineTransform))([AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) at)            Returns an iteration object that defines the boundary of this RoundRectangle2D. |
| [PathIterator](http://docs.google.com/java/awt/geom/PathIterator.html) | **QuadCurve2D.**[**getPathIterator**](http://docs.google.com/java/awt/geom/QuadCurve2D.html#getPathIterator(java.awt.geom.AffineTransform))([AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) at)            Returns an iteration object that defines the boundary of the shape of this QuadCurve2D. |
| [PathIterator](http://docs.google.com/java/awt/geom/PathIterator.html) | **Ellipse2D.**[**getPathIterator**](http://docs.google.com/java/awt/geom/Ellipse2D.html#getPathIterator(java.awt.geom.AffineTransform))([AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) at)            Returns an iteration object that defines the boundary of this Ellipse2D. |
| [PathIterator](http://docs.google.com/java/awt/geom/PathIterator.html) | **CubicCurve2D.**[**getPathIterator**](http://docs.google.com/java/awt/geom/CubicCurve2D.html#getPathIterator(java.awt.geom.AffineTransform))([AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) at)            Returns an iteration object that defines the boundary of the shape. |
| [PathIterator](http://docs.google.com/java/awt/geom/PathIterator.html) | **Area.**[**getPathIterator**](http://docs.google.com/java/awt/geom/Area.html#getPathIterator(java.awt.geom.AffineTransform))([AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) at)            Creates a [PathIterator](http://docs.google.com/java/awt/geom/PathIterator.html) for the outline of this Area object. |
| [PathIterator](http://docs.google.com/java/awt/geom/PathIterator.html) | **Arc2D.**[**getPathIterator**](http://docs.google.com/java/awt/geom/Arc2D.html#getPathIterator(java.awt.geom.AffineTransform))([AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) at)            Returns an iteration object that defines the boundary of the arc. |
| [PathIterator](http://docs.google.com/java/awt/geom/PathIterator.html) | **Path2D.Float.**[**getPathIterator**](http://docs.google.com/java/awt/geom/Path2D.Float.html#getPathIterator(java.awt.geom.AffineTransform))([AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) at)            Returns an iterator object that iterates along the Shape boundary and provides access to the geometry of the Shape outline. |
| [PathIterator](http://docs.google.com/java/awt/geom/PathIterator.html) | **Path2D.Double.**[**getPathIterator**](http://docs.google.com/java/awt/geom/Path2D.Double.html#getPathIterator(java.awt.geom.AffineTransform))([AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) at)            Returns an iterator object that iterates along the Shape boundary and provides access to the geometry of the Shape outline. |
| [PathIterator](http://docs.google.com/java/awt/geom/PathIterator.html) | **Line2D.**[**getPathIterator**](http://docs.google.com/java/awt/geom/Line2D.html#getPathIterator(java.awt.geom.AffineTransform))([AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) at)            Returns an iteration object that defines the boundary of this Line2D. |
| [PathIterator](http://docs.google.com/java/awt/geom/PathIterator.html) | **Rectangle2D.**[**getPathIterator**](http://docs.google.com/java/awt/geom/Rectangle2D.html#getPathIterator(java.awt.geom.AffineTransform,%20double))([AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) at, double flatness)            Returns an iteration object that defines the boundary of the flattened Rectangle2D. |
| [PathIterator](http://docs.google.com/java/awt/geom/PathIterator.html) | **QuadCurve2D.**[**getPathIterator**](http://docs.google.com/java/awt/geom/QuadCurve2D.html#getPathIterator(java.awt.geom.AffineTransform,%20double))([AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) at, double flatness)            Returns an iteration object that defines the boundary of the flattened shape of this QuadCurve2D. |
| [PathIterator](http://docs.google.com/java/awt/geom/PathIterator.html) | **CubicCurve2D.**[**getPathIterator**](http://docs.google.com/java/awt/geom/CubicCurve2D.html#getPathIterator(java.awt.geom.AffineTransform,%20double))([AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) at, double flatness)            Return an iteration object that defines the boundary of the flattened shape. |
| [PathIterator](http://docs.google.com/java/awt/geom/PathIterator.html) | **Area.**[**getPathIterator**](http://docs.google.com/java/awt/geom/Area.html#getPathIterator(java.awt.geom.AffineTransform,%20double))([AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) at, double flatness)            Creates a PathIterator for the flattened outline of this Area object. |
| [PathIterator](http://docs.google.com/java/awt/geom/PathIterator.html) | **Path2D.**[**getPathIterator**](http://docs.google.com/java/awt/geom/Path2D.html#getPathIterator(java.awt.geom.AffineTransform,%20double))([AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) at, double flatness)            Returns an iterator object that iterates along the Shape boundary and provides access to a flattened view of the Shape outline geometry. |
| [PathIterator](http://docs.google.com/java/awt/geom/PathIterator.html) | **Line2D.**[**getPathIterator**](http://docs.google.com/java/awt/geom/Line2D.html#getPathIterator(java.awt.geom.AffineTransform,%20double))([AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) at, double flatness)            Returns an iteration object that defines the boundary of this flattened Line2D. |
| [PathIterator](http://docs.google.com/java/awt/geom/PathIterator.html) | **RectangularShape.**[**getPathIterator**](http://docs.google.com/java/awt/geom/RectangularShape.html#getPathIterator(java.awt.geom.AffineTransform,%20double))([AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) at, double flatness)            Returns an iterator object that iterates along the Shape object's boundary and provides access to a flattened view of the outline of the Shape object's geometry. |
| void | **AffineTransform.**[**preConcatenate**](http://docs.google.com/java/awt/geom/AffineTransform.html#preConcatenate(java.awt.geom.AffineTransform))([AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) Tx)            Concatenates an AffineTransform Tx to this AffineTransform Cx in a less commonly used way such that Tx modifies the coordinate transformation relative to the absolute pixel space rather than relative to the existing user space. |
| void | **AffineTransform.**[**setTransform**](http://docs.google.com/java/awt/geom/AffineTransform.html#setTransform(java.awt.geom.AffineTransform))([AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) Tx)            Sets this transform to a copy of the transform in the specified AffineTransform object. |
| void | **Area.**[**transform**](http://docs.google.com/java/awt/geom/Area.html#transform(java.awt.geom.AffineTransform))([AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) t)            Transforms the geometry of this Area using the specified [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html). |
| abstract  void | **Path2D.**[**transform**](http://docs.google.com/java/awt/geom/Path2D.html#transform(java.awt.geom.AffineTransform))([AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) at)            Transforms the geometry of this path using the specified [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html). |
| void | **Path2D.Float.**[**transform**](http://docs.google.com/java/awt/geom/Path2D.Float.html#transform(java.awt.geom.AffineTransform))([AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) at)            Transforms the geometry of this path using the specified [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html). |
| void | **Path2D.Double.**[**transform**](http://docs.google.com/java/awt/geom/Path2D.Double.html#transform(java.awt.geom.AffineTransform))([AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) at)            Transforms the geometry of this path using the specified [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html). |

| Constructors in [java.awt.geom](http://docs.google.com/java/awt/geom/package-summary.html) with parameters of type [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) | |
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| [**AffineTransform**](http://docs.google.com/java/awt/geom/AffineTransform.html#AffineTransform(java.awt.geom.AffineTransform))([AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) Tx)            Constructs a new AffineTransform that is a copy of the specified AffineTransform object. |
| [**Path2D.Double**](http://docs.google.com/java/awt/geom/Path2D.Double.html#Path2D.Double(java.awt.Shape,%20java.awt.geom.AffineTransform))([Shape](http://docs.google.com/java/awt/Shape.html) s, [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) at)            Constructs a new double precision Path2D object from an arbitrary [Shape](http://docs.google.com/java/awt/Shape.html) object, transformed by an [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) object. |
| [**Path2D.Float**](http://docs.google.com/java/awt/geom/Path2D.Float.html#Path2D.Float(java.awt.Shape,%20java.awt.geom.AffineTransform))([Shape](http://docs.google.com/java/awt/Shape.html) s, [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) at)            Constructs a new single precision Path2D object from an arbitrary [Shape](http://docs.google.com/java/awt/Shape.html) object, transformed by an [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) object. |

| Uses of [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) in [java.awt.image](http://docs.google.com/java/awt/image/package-summary.html) | |
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| Methods in [java.awt.image](http://docs.google.com/java/awt/image/package-summary.html) that return [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) | |
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| [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) | **AffineTransformOp.**[**getTransform**](http://docs.google.com/java/awt/image/AffineTransformOp.html#getTransform())()            Returns the affine transform used by this transform operation. |

| Constructors in [java.awt.image](http://docs.google.com/java/awt/image/package-summary.html) with parameters of type [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) | |
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| [**AffineTransformOp**](http://docs.google.com/java/awt/image/AffineTransformOp.html#AffineTransformOp(java.awt.geom.AffineTransform,%20int))([AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) xform, int interpolationType)            Constructs an AffineTransformOp given an affine transform and the interpolation type. |
| [**AffineTransformOp**](http://docs.google.com/java/awt/image/AffineTransformOp.html#AffineTransformOp(java.awt.geom.AffineTransform,%20java.awt.RenderingHints))([AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) xform, [RenderingHints](http://docs.google.com/java/awt/RenderingHints.html) hints)            Constructs an AffineTransformOp given an affine transform. |

| Uses of [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) in [java.awt.image.renderable](http://docs.google.com/java/awt/image/renderable/package-summary.html) | |
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| Methods in [java.awt.image.renderable](http://docs.google.com/java/awt/image/renderable/package-summary.html) that return [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) | |
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| [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) | **RenderContext.**[**getTransform**](http://docs.google.com/java/awt/image/renderable/RenderContext.html#getTransform())()            Gets the current user-to-device AffineTransform. |

| Methods in [java.awt.image.renderable](http://docs.google.com/java/awt/image/renderable/package-summary.html) with parameters of type [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) | |
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| void | **RenderContext.**[**concatenateTransform**](http://docs.google.com/java/awt/image/renderable/RenderContext.html#concatenateTransform(java.awt.geom.AffineTransform))([AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) modTransform)            Modifies the current user-to-device transform by appending another transform. |
| void | **RenderContext.**[**concetenateTransform**](http://docs.google.com/java/awt/image/renderable/RenderContext.html#concetenateTransform(java.awt.geom.AffineTransform))([AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) modTransform)  **Deprecated.** *replaced by concatenateTransform(AffineTransform).* |
| void | **RenderContext.**[**preConcatenateTransform**](http://docs.google.com/java/awt/image/renderable/RenderContext.html#preConcatenateTransform(java.awt.geom.AffineTransform))([AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) modTransform)            Modifies the current user-to-device transform by prepending another transform. |
| void | **RenderContext.**[**preConcetenateTransform**](http://docs.google.com/java/awt/image/renderable/RenderContext.html#preConcetenateTransform(java.awt.geom.AffineTransform))([AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) modTransform)  **Deprecated.** *replaced by preConcatenateTransform(AffineTransform).* |
| void | **RenderContext.**[**setTransform**](http://docs.google.com/java/awt/image/renderable/RenderContext.html#setTransform(java.awt.geom.AffineTransform))([AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) newTransform)            Sets the current user-to-device AffineTransform contained in the RenderContext to a given transform. |

| Constructors in [java.awt.image.renderable](http://docs.google.com/java/awt/image/renderable/package-summary.html) with parameters of type [AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) | |
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| [**RenderContext**](http://docs.google.com/java/awt/image/renderable/RenderContext.html#RenderContext(java.awt.geom.AffineTransform))([AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) usr2dev)            Constructs a RenderContext with a given transform. |
| [**RenderContext**](http://docs.google.com/java/awt/image/renderable/RenderContext.html#RenderContext(java.awt.geom.AffineTransform,%20java.awt.RenderingHints))([AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) usr2dev, [RenderingHints](http://docs.google.com/java/awt/RenderingHints.html) hints)            Constructs a RenderContext with a given transform and rendering hints. |
| [**RenderContext**](http://docs.google.com/java/awt/image/renderable/RenderContext.html#RenderContext(java.awt.geom.AffineTransform,%20java.awt.Shape))([AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) usr2dev, [Shape](http://docs.google.com/java/awt/Shape.html) aoi)            Constructs a RenderContext with a given transform and area of interest. |
| [**RenderContext**](http://docs.google.com/java/awt/image/renderable/RenderContext.html#RenderContext(java.awt.geom.AffineTransform,%20java.awt.Shape,%20java.awt.RenderingHints))([AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) usr2dev, [Shape](http://docs.google.com/java/awt/Shape.html) aoi, [RenderingHints](http://docs.google.com/java/awt/RenderingHints.html) hints)            Constructs a RenderContext with a given transform. |

| | [**Overview**](http://docs.google.com/overview-summary.html) | [**Package**](http://docs.google.com/package-summary.html) | [**Class**](http://docs.google.com/java/awt/geom/AffineTransform.html) | **Use** | [**Tree**](http://docs.google.com/package-tree.html) | [**Deprecated**](http://docs.google.com/deprecated-list.html) | [**Index**](http://docs.google.com/index-files/index-1.html) | [**Help**](http://docs.google.com/help-doc.html) | | --- | --- | --- | --- | --- | --- | --- | --- | | | ***Java™ Platform***  ***Standard Ed. 6*** |
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| PREV   NEXT | [**FRAMES**](http://docs.google.com/index.html?java/awt/geom//class-useAffineTransform.html)    [**NO FRAMES**](http://docs.google.com/AffineTransform.html)     [**All Classes**](http://docs.google.com/allclasses-noframe.html) |

[Submit a bug or feature](http://bugs.sun.com/services/bugreport/index.jsp)

For further API reference and developer documentation, see [Java SE Developer Documentation](http://docs.google.com/webnotes/devdocs-vs-specs.html). That documentation contains more detailed, developer-targeted descriptions, with conceptual overviews, definitions of terms, workarounds, and working code examples.

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