1. Top 10 Selling Products by Quantity

```
top_products = df.groupby('product_name')['quantity'].sum().sort_values(ascending=False).head(10)
plt.figure(figsize=(10, 5))
sns.barplot(x=top_products.values, y=top_products.index, palette='viridis')
plt.title("Top 10 Selling Products by Quantity")
plt.xlabel("Quantity Sold")
plt.ylabel("Product")
plt.tight_layout()
plt.show()
```

2. Sales Distribution by Category

```
plt.figure(figsize=(8, 5))
sns.boxplot(x='category', y='price', data=df)
plt.xticks(rotation=45)
plt.title("Price Distribution by Category")
plt.tight_layout()
plt.show()
```

3. Monthly Revenue Trend

```
df['date'] = pd.to_datetime(df['date'])
df['month'] = df['date'].dt.to_period('M')
df['revenue'] = df['price'] * df['quantity']
monthly_rev = df.groupby('month')['revenue'].sum()

plt.figure(figsize=(10, 5))
monthly_rev.plot(marker='o')
plt.title("Monthly Revenue Trend")
plt.xlabel("Month")
plt.ylabel("Revenue")
plt.xticks(rotation=45)
plt.tight_layout()
plt.show()
```

4. Quantity by Category

```
plt.figure(figsize=(8, 5))
sns.barplot(data=df.groupby('category')['quantity'].sum().reset_index(),              x='category',
y='quantity', palette='Set2')
plt.xticks(rotation=45)
plt.title("Total Quantity Sold per Category")
plt.tight_layout()
plt.show()
```

5. Average Price per Category

```
avg_price = df.groupby('category')['price'].mean().sort_values()
```

```
plt.figure(figsize=(8, 5))
sns.barplot(x=avg_price.values, y=avg_price.index, palette='coolwarm')
plt.title("Average Product Price by Category")
plt.xlabel("Average Price")
plt.ylabel("Category")
plt.tight_layout()
plt.show()
```

6. Sales Heatmap by Day and Category

```
df['day'] = df['date'].dt.day_name()
heatmap_data = df.pivot_table(index='day', columns='category', values='revenue',
aggfunc='sum').fillna(0)

plt.figure(figsize=(10, 6))
sns.heatmap(heatmap_data, cmap='YlGnBu', annot=True, fmt=".0f")
plt.title("Sales Heatmap by Day and Category")
plt.tight_layout()
plt.show()
```

7. Pie Chart of Revenue by Category

```
revenue_by_cat = df.groupby('category')['revenue'].sum()
plt.figure(figsize=(6, 6))
revenue_by_cat.plot.pie(autopct='%1.1f%%', startangle=90, shadow=True)
plt.ylabel('')
plt.title("Revenue Share by Category")
plt.tight_layout()
plt.show()
```

8. Price Distribution

```
plt.figure(figsize=(8, 5))
sns.histplot(df['price'], bins=30, kde=True, color='purple')
plt.title("Product Price Distribution")
plt.xlabel("Price")
plt.tight_layout()
plt.show()
```