+5

1. Find an equation of a line in the form $y = mx + b$ which passes through the points $(2, 3)$ and $(-1, 9)$.

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{9-3}{-1-2} = -2$$

$$y = -2x + b$$

$$3 = -2 \cdot 2 + b$$

$$7 = b$$

$$y = -2x + 7$$

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2. Rationalize the denominator: $\dfrac{x-9}{\sqrt{x}-3}$

$$\frac{x-9}{\sqrt{x}-3} \cdot \frac{\sqrt{x}+3}{\sqrt{x}+3} = \frac{(x-9)(\sqrt{x}+3)}{x-9} = \sqrt{x}+3$$

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3. Simplify: $\dfrac{\frac{y}{2} - \frac{2}{y}}{y+2}$ LCD: $2y$

$$\frac{\frac{y}{2} \cdot 2y - \frac{2}{y} \cdot 2y}{(y+2)(2y)} = \frac{y^2-4}{(y+2)2y}$$

$$= \frac{(y+2)(y-2)}{(y+2)(2y)}$$

$$= \frac{y-2}{2y}$$

+4 4. Expand $x(\sqrt{x} - \sqrt[3]{x})$.

$$x(x^{\frac{1}{2}} - x^{\frac{1}{3}}) = x^{1+\frac{1}{2}} - x^{1+\frac{1}{3}}$$

$$= x^{\frac{3}{2}} - x^{\frac{4}{3}}$$

5. Convert $\frac{2\pi}{3}$ to degrees.

+2

$$\frac{2\pi}{3} \cdot \frac{180}{\pi} = 120^\circ$$

6. Evaluate the following:

+2 (a) $\sin(60°)$ $\sqrt{3}/2$

+2 (b) $\cos(3\pi/4)$ $-1/\sqrt{2}$ or $-\sqrt{2}/2$

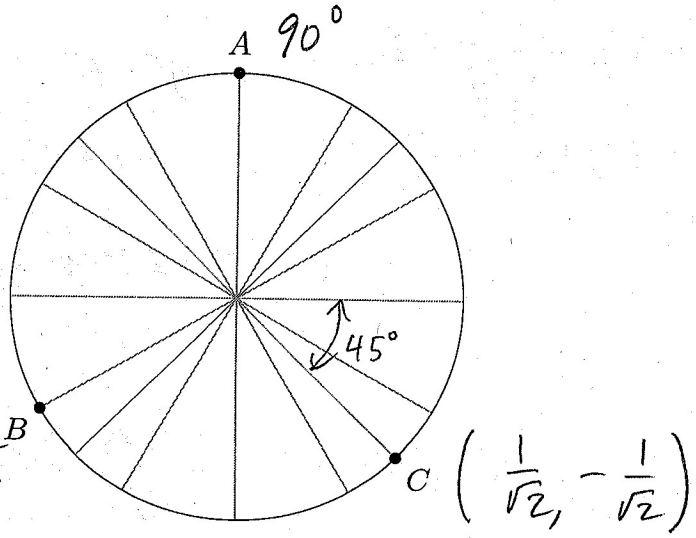
+2 (c) $\tan(4\pi/3)$ $\sqrt{3}$

7. Below is a unit circle. Put your answers next to the corresponding points on the unit circle.

+2 (a) Point A corresponds to what angle in degree measure?

+2 (b) Point B corresponds to what angle in radian measure?

+2 (c) What are the coordinates of Point C?



$B = 210^\circ$

$210 \cdot \frac{\pi}{180} = \frac{7\pi}{6}$

$\frac{7\pi}{6}$

$\left(\frac{1}{\sqrt{2}}, -\frac{1}{\sqrt{2}}\right)$