34

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

+5

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

$y = 2x + b$

$9 = 2 \cdot 2 + b$

$5 = b$

$y = 2x + 5$

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

+5

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

$$= \sqrt{x} - 3$$

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

+6

$$\frac{\frac{x}{2} \cdot 2x - \frac{2}{x} \cdot 2x}{(x-2)\,2x} = \frac{x^2 - 4}{(x-2) \cdot 2x}$$

$$= \frac{(x+2)(x-2)}{(x-2) \cdot 2x}$$

$$= \frac{x+2}{2x}$$

4. Expand $x(\sqrt[3]{x} - 2\sqrt{x})$.

+4

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

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

5. Convert $\frac{3\pi}{4}$ to degrees.

+2

$$\frac{3\pi}{4} \cdot \frac{180}{\pi} = 135^\circ$$

6. Evaluate the following:

+2 (a) $\sin(3\pi/4)$ $1/\sqrt{2}$

+2 (b) $\cos(60°)$ $1/2$

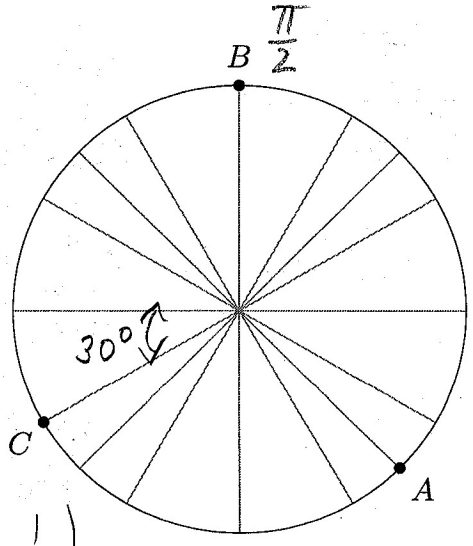
+2 (c) $\tan(2\pi/3)$ $-\sqrt{3}$

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 $C$?




$B = 90°$

$90 \cdot \frac{\pi}{180} = \frac{\pi}{2}$

$315°$ or $-45°$

$\left(-\frac{\sqrt{3}}{2}, -\frac{1}{2}\right)$