Math 30-1 Equivalency *Readiness Check*

These questions have been created to help you to assess your readiness for this test. You do not need to report the results of this test.   It is for your use ONLY.

* If you score less than 50% on this test, we recommend you email upgrading@nait.ca for advisement.

DO NOT USE A CALCULATOR FOR THIS TEST.

1) Determine the quotient when $P(x) = x^3 - 2x^2 - 9$ is divided by $x - 3$

   a. $x^2 + x + 3$ b. $x^2 - 5x + 6$ c. $x^2 + x - 6$ d. $x^2 + 5x + 15$

2) The graph of $f(x) = \dfrac{2x + 3}{3x^2 + 7x - 6}$ has the asymptotes:

   a. $x = -3,\ x = \dfrac{2}{3},\ y = 0$

   b. $x = 3,\ x = -\dfrac{2}{3},\ y = 0$

   c. $x = -3,\ x = 0,\ y = \dfrac{2}{3}$

   d. $x = 0,\ x = \dfrac{2}{3},\ y = -3$

3) Given $f(x) = x^2 + 1$ and $g(x) = \sqrt{x + 3}$, then $(f \circ g)(x) =$

   a. $\sqrt{x^2 + 4}$ b. $x + 4$ c. $x - 4$ d. $x^2 + 4$

4) If $5^{x+1} = 7^x$, then x is

   a. $\dfrac{\log(5)}{\log(5) - \log(7)}$ b. $\dfrac{\log(7)}{\log(5) - \log(7)}$ c. $\dfrac{\log(7) - \log(5)}{\log(5)}$ d. $\dfrac{\log(5)}{\log(7) - \log(5)}$

5) Solve for x. $\log_3(x + 8) + \log_3 2 = \log_3 6$

   a. -4 b. 4 c. -5 d. 5

6) In the expansion of $(x + y)^4$, determine the coefficient of the term containing $x^2 y^2$.

   a. 6 b. 1 c. 4 d. 8

7) $260°$ converted to radian measure is:

    a. $\dfrac{13\pi}{2}$ b. $\dfrac{13\pi}{9}$ c. $\dfrac{13}{2\pi}$ d. $\dfrac{13}{9\pi}$

8) Find the value of $\dfrac{7!}{3!}$

    a. $4!$ b. 280 c. 840 d. $2.\overline{33}$

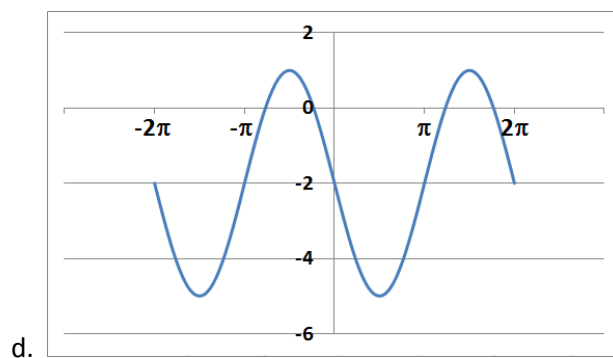**9)** Find the exact value of $\sin(-225°)$.
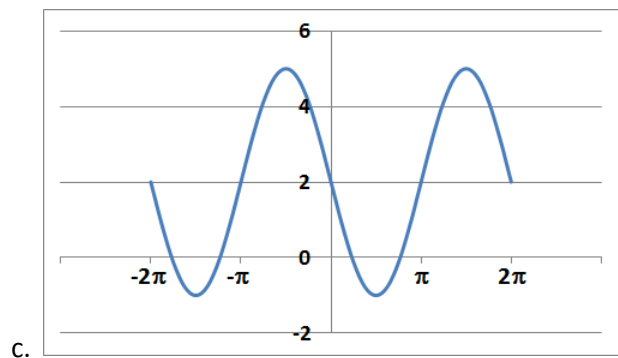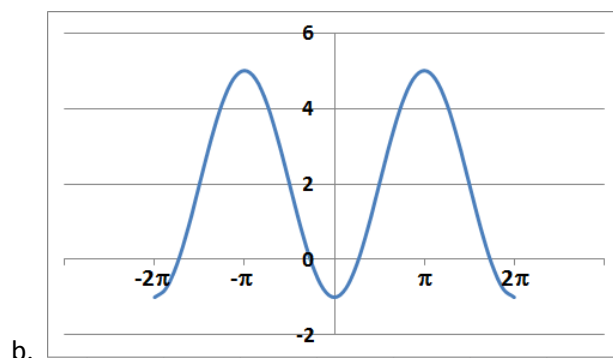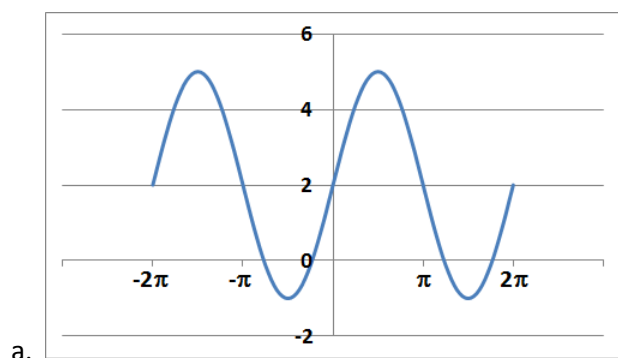
    a. $\sqrt{2}$ b. $\dfrac{1}{2}$ c. $\dfrac{2}{\sqrt{2}}$ d. $\dfrac{\sqrt{2}}{2}$

10) Choose the graph of: $y = -3\cos\left[\theta - \dfrac{\pi}{2}\right] + 2$

a.

b.

c.

d.

Answers:

1) a   **2)** a   **3)** b   **4)** d   **5)** c   **6)** a   **7)** b   **8)** c   **9)** d   **10)** c