TESTS FOR HIGHER STANDARDS

MATHEMATICS

SCCCR-Mathematics

GRADE LEVEL TEST

Algebra I
End-of-Course

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AREI.3

8.   What is the solution to $5(1-x) > 4(3-x)$?

A $x < -17$
B $x > -17$
C $x < -7$
D $x > 7$

AREI.4.a

9.   Solve the quadratic equation $2x^2 + 8x - 3 = 0$ by completing the square.

$$2x^2 + 8x - 3 = 0$$

$$2x^2 + 8x = 3$$

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

$$x^2 + 4x + 4 = \frac{11}{2}$$

Which represents the next step in the process?

A $(x+4)^2 = \left(\dfrac{11}{2}\right)^2$

B $(x+4)^2 = \dfrac{11}{2}$

C $(x+2)^2 = \left(\dfrac{11}{2}\right)^2$

D $(x+2)^2 = \dfrac{11}{2}$

NQ.2

35. Centripetal force is a force that acts on a body moving in a circular path, directed toward the center around which the body is moving. The force is dependent on the mass of the object, how fast it is moving, and the radius of the circle formed by the moving body. To calculate the centripetal force of an object we use the formula:

$$\text{Centripetal force} = \text{mass} \cdot \frac{(\text{velocity})^2}{\text{radius}}$$

If mass is measured in kilograms (kg), velocity is measured in meters/second $\left(\frac{m}{s}\right)$, and the radius in meters, which would be the units used to measure Centripetal force?

A $(kg)\left(\dfrac{m}{s^2}\right)$

B $(kg)\left(\dfrac{m^2}{s^2}\right)$

C $(kg^2)\left(\dfrac{m}{s}\right)$

D $(kg)\left(\dfrac{m}{s}\right)$

NQ.3

36. A barometer is accurate in determining barometric pressure within ± 0.1 millibars (mb). If the current barometric pressure reading is 1019.4 mb, what is the range within which the pressure (p) may fall?

A $1019.3 \text{ mb} \le p < 1019.5 \text{ mb}$
B $1019 \text{ mb} \le p < 1020 \text{ mb}$
C $1019.39 \text{ mb} \le p < 1019.41 \text{ mb}$
D $1010 \text{ mb} \le p < 1020 \text{ mb}$