1. Solve for \( a \): \( 3(2 - 5a) = 3 + 2a \)
   (a) \( \frac{3}{17} \)
   (b) \( \frac{17}{3} \)
   (c) \( -\frac{17}{3} \)
   (d) \( -\frac{3}{2} \)
   (e) \( \frac{2}{3} \)

2. Solve for \( x \): \( \frac{x}{2} + \frac{x}{3} = 1 \)
   (a) 3
   (b) 6
   (c) \( \frac{5}{6} \)
   (d) \( \frac{6}{5} \)
   (e) \( \frac{5}{2} \)

3. If \( x - y = -10 \) and \( x - y = -2 \), then
   (a) There is insufficient information to solve the system of equations
   (b) There is no solution that satisfies the above system of equations
   (c) \( x = 15, y = 5 \)
   (d) \( x = -20, y = 10 \)
   (e) \( x = 0, y = 0 \)

4. Solve for \( t \) given the values of the parameters: \( s = u_0 t + \frac{1}{2} a t^2 \), where \( s = 1, a = 3 \) and \( u_0 = 0 \)
   (a) \( \pm \sqrt{\frac{3}{2}} \)
   (b) \( \pm \sqrt{\frac{2}{3}} \)
   (c) 0
   (d) \( \sqrt{\frac{3}{2}} \)
   (e) \( \sqrt{\frac{2}{3}} \)

5. In the right-angled triangle shown, which of the following is true? There may be more than one correct answer, but choose only one
   (a) \( \cos^{-1}(a/c) = \phi \)
   (b) \( \cos^{-1}(c/a) = \phi \)
   (c) \( \cos^{-1}(c/a) = 90^\circ \)
   (d) \( \cos^{-1}(c/a) = \theta \)
   (e) \( \cos^{-1}(a/c) = \theta \)

6. If the radius of a circle is found to be \( r = 0.30 \text{ cm} \), then the area of the circle is:
   (a) \( 1.88 \text{ cm}^2 \)
   (b) \( 0.94 \text{ cm}^2 \)
   (c) \( 0.94 \text{ cm} \)
   (d) \( 1.88 \text{ cm} \)
   (e) \( 0.28 \text{ cm}^2 \)

7. Once Alice gives half of her money to Hapless Bob, she is left with \$3 and Bob will have twice as much as he had initially. Before the transaction:
   (a) Alice had \$4 and Bob had \$12
   (b) Alice had \$6 and Bob had \$3
   (c) Alice had \$12 and Bob had \$6
   (d) There is insufficient information
   (e) Alice had \$12 and Bob had \$4

8. Evaluate the following derivative at \( x = 2 \): \( \frac{d}{dx} (x^2 - 3x) \)
   (a) 4
   (b) -1
   (c) 1
   (d) -5

9. The following can be reduced to: \( \frac{36(y^2 - z^2)}{(6y + 6z)} \)
   (a) \( 6yz \)
   (b) \( 6(y - z) \)
   (c) \( \frac{6(y - z)}{yz} \)
   (d) \( \frac{6y}{z} - \frac{6z}{y} \)
   (e) \( 6(y + z) \)

10. In the diagram below, \( \theta = 30.0^\circ \). This means that
    (a) \( \phi = 45^\circ \)
    (b) \( \phi = 60^\circ \)
    (c) \( \phi = 30^\circ \)
    (d) \( \phi = 90^\circ \)
    (e) \( \phi = 120^\circ \)