1. Solve for $a$: $3(2-5a) = 3+2a$

   (a) $3/17$
   (b) $17/3$
   (c) $-17/3$
   (d) $-3/2$
   (e) $2/3$

2. Solve for $x$: $\dfrac{x}{2} + \dfrac{x}{3} = 1$

   (a) 3
   (b) 6
   (c) $5/6$
   (d) $6/5$
   (e) $5/2$

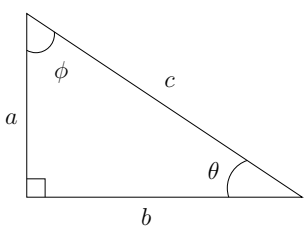
3. If $x - y = -10$ and $x - y = -2$, then

   (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: $s = u_\circ t + \frac{1}{2}at^2$, where $s = 1, a = 3$ and $u_\circ = 0$

   (a) $\pm\sqrt{3/2}$
   (b) $\pm\sqrt{2/3}$
   (c) 0
   (d) $\sqrt{\pm 3/2}$
   (e) $\sqrt{\pm 2/3}$

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) $\cos^{-1}(c/a) = 90°$
   (d) $\cos^{-1}(c/a) = \theta$
   (e) $\cos^{-1}(a/c) = \theta$

6. If the radius of a circle is found to be $r = 0.30$ cm, then the area of the circle is:

   (a) 1.88 cm$^2$
   (b) 0.94 cm$^2$
   (c) 0.94 cm
   (d) 1.88 cm
   (e) 0.28 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

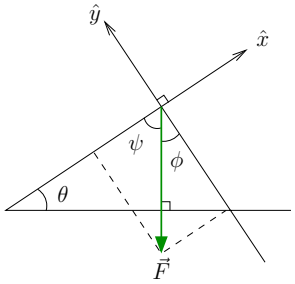
8. Evaluate the following derivative at $x = 2$: $\frac{d}{dx}\left(x^2 - 3x\right)$

   (a) 4
   (b) $-1$
   (c) 1
   (d) $-5$

9. The following can be reduced to: $\dfrac{36(y^2 - z^2)}{(6y + 6z)}$

   (a) $6yz$
   (b) $6(y - z)$
   (c) $\dfrac{6(y-z)}{yz}$
   (d) $\dfrac{6y}{z} - \dfrac{6z}{y}$
   (e) $6(y + z)$

10. In the diagram below, $\theta = 30.0°$. This means that




   (a) $\phi = 45°$
   (b) $\phi = 60°$
   (c) $\phi = 30°$
   (d) $\phi = 90°$
   (e) $\phi = 120°$