Practice Questions (Set 1) for University of Findlay Placement Test A (Algebra Skills)

This is only a sampling of the types of questions that a student may see on the placement test.

Question 1: (1 point)

Remove parentheses and simplify the expression $\left(xy^3\right)^2$.

(a) x^2y^6
(b) xy^6
(c) x^2y^5
(d) $2\ xy^3$
(e) xy^5

Question 2: (1 point)

Remove parentheses and simplify the expression $\sqrt{3}\left(\sqrt{3}+2\right)$.

(a) $3+2\sqrt{3}$
(b) 11
(c) $9+2\sqrt{3}$
(d) 5
(e) $\sqrt{15}$

Question 3: (1 point)

Solve the equation $\frac{x-3}{8}-\frac{7}{4}=\frac{5}{8}$.

(a) $x=22$
(b) $x=15$
(c) $x=16$
(d) $x=-6$
(e) $x=\frac{23}{5}$

Question 4: (1 point)

Solve the equation $x^2+2\ x=3$.

(a) $x=-3,1$
(b) $x=1$
(c) $x=\frac{3-2\ x}{x}$
(d) $x=1,3$
(e) $x=-3,-1$

Question 5: (1 point)

Remove parentheses and simplify the expression $\left(2\ x^2\ y^3\right)\ \left(-3\ \ xy^2\right)$.

(a) $-6\ xy^6$
(b) $-6\ xy$
(c) $-\ xy$
(d) $-6\ x^3y^5$
(e) $-x^3y^5$

Question 6: (1 point)

Find the x-intercept of the graph of $2\ x+3\ y+12=0$.

(a) $y=4$
(b) $x=-6$
(c) $y=-4$
(d) $(-6\ ,-4)$
(e) $x=6$

Question 7: (1 point)

Remove parentheses and simplify the expression $\left(\frac{x^2-4}{2\ x}\right)\ \left(\frac{6}{3\ x-6}\right)$.

(a) $\frac{x+2}{x}$
(b) $-\frac{2}{3}$
(c) $\frac{2}{x}$
(d) $\frac{x^2-4}{3\ x^2}$
(e) $\frac{x^2-4}{x^2-2\ x}$

Question 8: (1 point)

Simplify the expression $\frac{x+\frac{3}{y}}{y+3}$.

(a) $\frac{xy+3}{y^2+3\ y}$
(b) $\frac{xy+3}{y+3}$
(c) $\frac{x+3}{y^2+3\ y}$
(d) $\frac{(x+3)\ (y+3)}{y}$
(e) $x+1$

Question 9: (1 point)

If $x = 3$ and $y = -5$, then find the value of the expression $xy - \frac{6\ y}{x}$.

(a) -15
(b) -25
(c) $-\frac{7}{3}$
(d) -5
(e) 5

Question 10: (1 point)

Solve the equation $5\ y - 2 = 2\ x + 3$ for y.

(a) $y = 2\ x$
(b) $y = \frac{2}{5}x + \frac{2}{5}$
(c) $y = 2\ x + 1$
(d) $y = \frac{2}{5}x + 1$
(e) $y = 1$

Question 11: (1 point)

Find the slope and the y-intercept of the line $3\ x - 5\ y - 9 = 0$.

(a) $m = \frac{5}{3}, b = 3$
(b) $m = -3, b = 4$
(c) $m = 3, b = -14$
(d) $m = \frac{3}{5}, b = \frac{9}{5}$
(e) $m = \frac{3}{5}, b = -\frac{9}{5}$

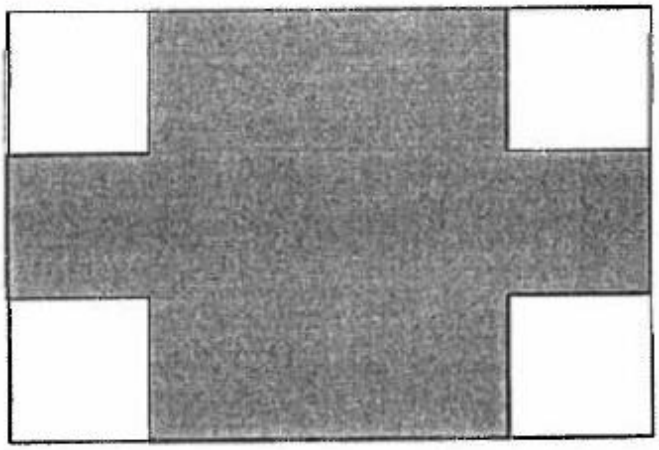
Question 12: (1 point)

In a calculus class, 15 of the students play soccer. Find the total number of students in the class if 3 out of every 5 play soccer.

(a) 25
(b) 9
(c) $\frac{45}{8}$
(d) 40
(e) 21

Question 13: (1 point)

In the figure below, the large rectangle has dimensions 6 inches by 9 inches. The squares on each corner are 2 inches by 2 inches. Find the area in square inches of the shaded region.



(a) 38
(b) 24
(c) 10
(d) 39
(e) 50

Question 14: (1 point)

Express $\sqrt{50\ x^4y^{10}}$ in simplest radical form.

(a) $5\sqrt{2}x^2y^8$
(b) $25\ x^2y^5$
(c) $8\ x^2y^5$
(d) $8\ x^2y^8$
(e) $5\sqrt{2}x^2y^5$