

$$2x + 5 = 9$$

$$2x = 9 - 5$$

$$2x = \frac{4}{2}$$

$$x = \frac{2}{2}$$

$$5(a+b) - 1 = 9$$

$$5(a+b) = 9 + 1$$

$$5(a+b) = \frac{10}{5}$$

$$a+b = \frac{2}{5}$$



Basics

C.W.

1

If $x + 3 = 2x - 2$, what is the value of $x - 4$?

A. 9

~~B. 5~~

C. 4

D. 1

$$1x - 2x = -2 - 3$$

$$-1x = -5$$

$$x = 5$$

$$\begin{array}{r} x - 4 \\ 5 - 4 \\ \hline 1 \end{array}$$

shift solving

2

If $3(c + d) = 5$, what is the value of $c + d$?

A) $\frac{3}{5}$

B) $\frac{5}{3}$

C) 3

D) 5

$$c + d = \frac{5}{3}$$

3

$$5w - 12 = 3w$$

What value of w in the solution of the equation above?

$$5w - 3w = 12$$

$$2w = 12$$

$$w = 6$$

shift solving

Equations Part A

H.W

4

$$2x + 7 = 15$$

What is the solution to the equation above?

5

$$y = 5x + 4$$

Given the equation above, if $y = 12$, what is the value of x ?

6

$$\frac{1}{2}x - 700 = 0$$

What value of x satisfies the equation above?



1

If $4t - 10 = 11a$, and $a = -2$, what is the value of $10t - 10$?

A. -40

B. -8

~~C. -3~~

D. 1

$$4t - 10 = 11(-2)$$

shift
signs

$$t = -3$$

$$10t - 10$$

$$10(-3) - 10 = -40$$

2

$$2\left(\frac{x}{3} - \frac{1}{4}\right) - 2x = \frac{2}{5}$$

What is the solution to the equation above?

A. $x = -\frac{9}{28}$

B. $x = -\frac{27}{40}$

C. $x = -\frac{27}{10}$

D. $x = -\frac{3}{40}$



$$\frac{x}{2} = \frac{5}{4}$$

$$4x = 2(5)$$

$$6x + 8y = 5(2x - y), \text{ Find } \frac{x}{y}$$

$$6x + 8y = 10x - 5y$$

$$8y + 5y = 10x - 6x$$

$$13y = 4x$$

$$\frac{x}{y} = \frac{13}{4}$$

$$2x = 9y$$

$$\frac{x}{y} = \frac{9}{2}$$

$$2x = 15y$$

$$\frac{x}{y} = \frac{15}{2}$$

16



Basics

Equations Part B

1

If $\frac{1}{x-y} = \frac{3}{5y}$, which of the following proportions is equivalent?

A. $\frac{x}{y} = \frac{3}{8}$

B. $\frac{x}{y} = \frac{8}{3}$

C. $\frac{x}{y} = \frac{8}{15}$

D. $\frac{x}{y} = \frac{15}{8}$

Handwritten work for Question 1:
 $1(5y) = 3(x-y)$
 $5y = 3x - 3y$
 $5y + 3y = 3x$
 $8y = 3x$
 $\frac{x}{y} = \frac{8}{3}$

2

If $2x - 3 = 0$, what is the value of

$\frac{7}{3}x + \frac{1}{2}$?

Handwritten work for Question 2:
 $2x = \frac{3}{2}$
 $\frac{7}{3}(\frac{3}{2}) + \frac{1}{2}$
 $= 4$

3

If $\frac{2a}{3b} = \frac{1}{5}$, what is the value of $\frac{b}{a}$?

4

If $\frac{7}{x+2} = 0.5$, what is the value of x?

A) 1.5

B) 3

C) 12

D) 16



Basics

Equations Part B

1

Shift
Solve

$$\frac{3y-2(4-2y)}{3} = \frac{-11+3(2+3y)}{5}$$

What is the value of y in the equation above?

3.125

2

If $\frac{2}{5}$ of $10x$ is 6 more than x, what is the value of x?

- A) 2
- B) 3
- C) 4
- D) 6

$$\frac{2}{5} \times 10x = 6 + x$$

x = 2

Shift
Solve

3

If $\frac{2x-4}{4} - \frac{x+1}{6} = t + 1$ and $t = 3$, what

is the value of x?

A. 27

B. -1

C. 11

D. $\frac{31}{2}$

$$\frac{2x-4}{4} - \frac{x+1}{6} = 3+1$$

Shift
Solve

15.5



$$\sqrt{\quad} = +ve \text{ or } zero$$

~~-ve~~

$$\sqrt{\quad} = -5$$

$$\sqrt{x+6} = x$$

without solving

$$\text{a) } -1$$

$$\text{b) } -2$$

$$\text{c) } -3$$

$$\text{d) } 3$$



$$\sqrt{x+1} = 5^2$$

shift
solving

$$x+1 = 25$$

$$x = 25 - 1$$

$$\text{a) } 4$$

$$\text{b) } 6$$

$$\text{c) } 24$$

$$\text{d) } 26$$

$$\sqrt{25} = 5, -5, \pm 5$$

$$-\sqrt{25} = -5$$

$$x^2 = \pm \sqrt{25}$$



1

$$3x - 1 = \sqrt{3k^2 - x}$$

If $k > 0$ and $x = 2$ in the equation above, what is the value of k ?

(Grid in) $3(2) - 1 = \sqrt{3k^2 - 2}$

shift
solve

3

2

$$\sqrt{x-7} = 7^2$$

What value of x satisfies the given equation?

- A) 0
- B) 14
- C) 42
- D) 56

shift
solve

$$x - 7 = 49 + 7$$

$$x = 49 + 7$$

$$x = 56$$

3

$$\sqrt{k+2} - x = 0$$

In the equation above, k is a constant. If $x = 9$, what is the value of k ?

- A) 1
- B) 7
- C) 16
- D) 79



1

The solution set of the equation

$\sqrt{2x+1} - x = -1$ is:

- Shift Solving*
x = 4
- ~~A. {0, 1, 4}~~ $\sqrt{2(1)+1} - 1$
~~B. {1, 4}~~ $\sqrt{3} - 1$
C. {4}
~~D. {0}~~

2

Shift Solving

$x - 2 = \sqrt{x + 10}$

Which of the following values of x is a solution to the equation above?

- A) -1
B) 1
C) 4
D) 6

3

Which of the following is a solution to the equation

$\sqrt{14-x} + 2 = x$?

1. -2
2. 1
3. 5
A. I only
B. II only
C. III only
D. I and III

