Algebra Test 1 Solutions Spring 2020

1. a) True
   b) False, counter-example $x = 5$.

2. $(4+7)-7 = 11-7 = 4$ ✓

   $\left(\sqrt{49}\right)^2 = (7)^2 = 49$ ✓

3. $-8x = 16$

   $\boxed{x = -2}$

4. $3 \cdot \frac{1}{3}x = 5 \cdot 3$

   $\boxed{x = 15}$

5. $6x + 4 = 16$

   $-4 \quad -4$

   $6x = 12$

   $\boxed{x = 2}$

6. $-2x - 3 = 4x - 5$

   $-4x + 3 \quad -4x + 3$

   $-6x = -2$

   $x = \frac{2}{6}$

   $\boxed{x = 1/3}$

7. $3(2x+4) = -6+12x$

$6x+12 = -6+12x$

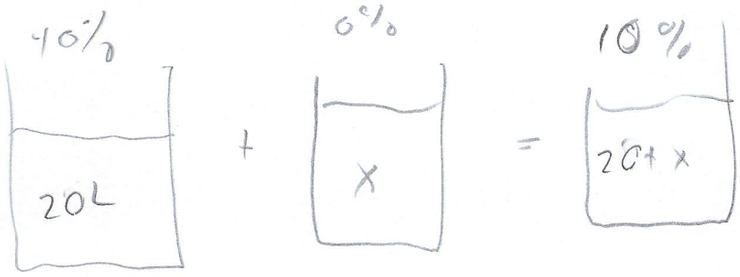
$-12x \quad -12 \qquad -12 \quad -12x$

$-6x = -18$

$\frac{-6x}{-6} = \frac{-18}{-6}$

$x = 3$

8.



$(.4)(20) + (0)(x) = .1(20+x)$

$8 = 2 + 0.1x$

$-2 \quad -2$

$6 = 0.1x$

$\frac{6}{0.1} = \frac{0.1x}{0.1}$

$60 = x$

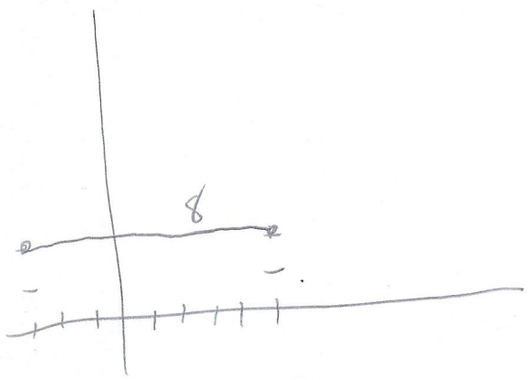
9. $4x+2y = 8$

$-4x \qquad -4x$

$2y = 8-4x \rightarrow y = 4-2x$

10. IV

11.



12. $2 \cdot 2 + 8 \stackrel{?}{=} 16$

$4 + 8 \stackrel{?}{=} 16$ ×

No

13. $-3x = 2y + 8 \qquad x = -2$

$(-3)(-2) = 2y + 8$

$6 = 2y + 8$

$-8 \qquad -8$

$-2 = 2y$

$-1 = y$

14. $f(5) = 3 \cdot 5 - 4 = 11$

15. $f(2) = 2^2 - 2 + 1 = 4 - 2 + 1 = 3$

16.

16. $y = 2x - 6$

a) x-int $y = 0$

$0 = 2x - 6$

$+6 \quad +6$

$6 = 2x$

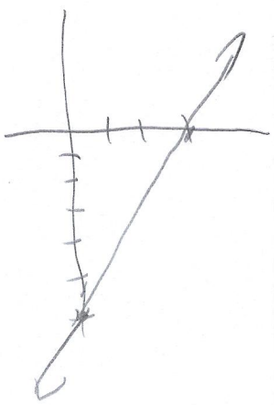
$3 = x$

b) y-int $x = 0$

$y = 2 \cdot 0 - 6$

$y = -6$

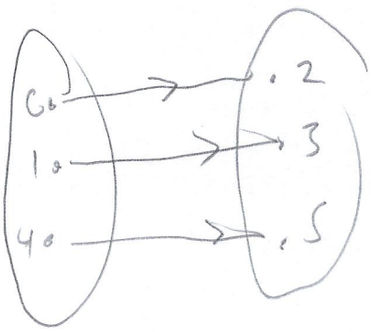
c)



17. a) $D = \{0, 1, 4\}$

b) $R = \{2, 3, 5\}$

c) Yes

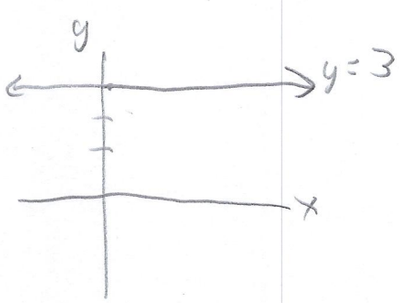


18 a) $D = \{1, 3, 4\}$ $R = \{1, 4\}$ Yes

b) $D = \{1, 3, 4\}$ $R = \{5, 19, 4\}$ Yes

c) $D = \{1, 2\}$ $R = \{3, 4, 6\}$ No

20.



21. The square root.