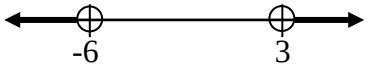
Algebra Review Handout Key

1. $-3 < x < 0$

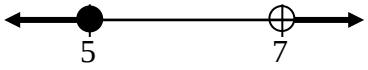
2. $x < -6$ or $x > 3$



3. $5 < x < 7$

4. $x \geq 7$

5. $x \leq 5$ or $x > 7$



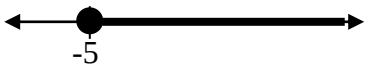
6. $x < 7$

7. $-10 < x \leq -5$

8. $-8 < x < -7$

9. $2 \leq x < 10$

10. $x \geq -5$



11. $-11 < x < -1$

12. $x > 2$

13. All Real Numbers

14. $0 < x < 6$

15. No Solutions

16. All Real Numbers

BACK OF HANDOUT

1. Let t = number Terry has
   Let 50 – t = number Jane has
   Jane's $> \frac{2}{3}$ Terry's
   $50 - t > \frac{2}{3}t$
   $t < 30$ so…
   Terry has at most 29 DVD's, and
   Jane has at least 21 DVD's.
2. Let d = number of dimes
   Let 20 – d = number of nickels
   \$ in dimes + \$ in nickels > Total \$
   $.10d + .05(20 - d) > 1.40$
   $d > 8$ so…
   There are at least 9 dimes in the purse.

3. Let d = Diane's age now
   Let d + 3 = Peter's age now
   Peter 20 yrs ago ≥ twice Diane's age 20 years ago
   $(d + 3) - 20 \geq 2(d - 20)$
   $x \leq 23$ so…
   Diane is 23 and Peter is 26.

4. Let t = time for each
   Dist. Faster Train + Dist. Slower Train ≥ 312
   $r \cdot t + r \cdot t$
   $82t + 74t \geq 312$
   $t \geq 2$ so…
   3 PM at the earliest.

5. Let x = the first number
   Let x + 1 = the second number
   $6x < 5(x + 1)$
   $x < 5$ so…
   The integers are 4 and 5.

Challenge:
Let c = Chris's age
Let c + 3 = Ben's age
Let c + 6 = Aaron's age
$12 < c + (c + 3) + (c + 6) < 21$
$12 < 3c + 9 < 21$
$1 < c < 4$ so…
Chris could be either 2 or 3 years old.
Check each by doing the product of their ages:
$2 \cdot 5 \cdot 8 = 80$ Product should be 80!
$3 \cdot 6 \cdot 9 = 162$
Therefore Chris is 2, Ben is 5, and Aaron is 8.