WORKSHEET 7.4 INVERSE FUNCTIONS

Inverse Relations
Find the inverse for each relation.

1.　　{ (1, -3), (-2, 3), (5, 1), (6, 4) }　　2.　　{ (-5, 7), (-6, -8), (1, -2), (10, 3) }

Finding Inverses
Find an equation for the inverse for each of the following relations.

3.　　$y = 3x + 2$　　　　4.　　$y = -5x - 7$　　　　5.　　$y = 12x - 3$

6.　　$y = -8x + 16$　　7.　　$y = \dfrac{2}{3}x - 5$　　8.　　$y = -\dfrac{3}{4}x + 5$

9.　　$y = -\dfrac{5}{8}x + 10$　　10.　　$y = \dfrac{1}{2}x + 8$　　11.　　$y = x^2 + 5$

12.　　$y = x^2 - 4$　　13.　　$y = (x + 3)^2$　　14.　　$y = (x - 6)^2$

15.　　$y = \sqrt{x - 2},\ y \geq 0$　　16.　　$y = \sqrt{x + 5},\ y \geq 0$　　17.　　$y = \sqrt{x} + 8,\ y \geq 8$

18.　　$y = \sqrt{x} - 7,\ y \geq -7$

Verifying Inverses
Verify that *f* and *g* are inverse functions.
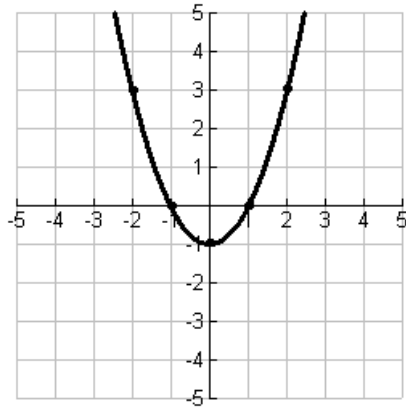
19.　　$f(x) = x + 6,\ g(x) = x - 6$　　　　20.　　$f(x) = 5x + 2,\ g(x) = \dfrac{x - 2}{5}$

21.　　$f(x) = -3x - 9,\ g(x) = -\dfrac{1}{3}x - 3$　　22.　　$f(x) = 2x - 7,\ g(x) = \dfrac{x + 7}{2}$

23.　　$f(x) = -4x + 8,\ g(x) = -\dfrac{1}{4}x + 2$　　24.　　$f(x) = \dfrac{1}{2}x - 7,\ g(x) = 2x + 14$
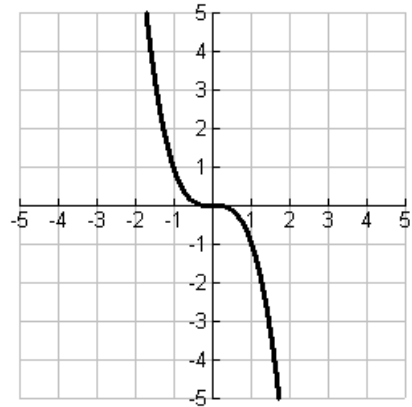
Graphing Inverses
Graph the inverse for each relation below (put your answer on the same graph).
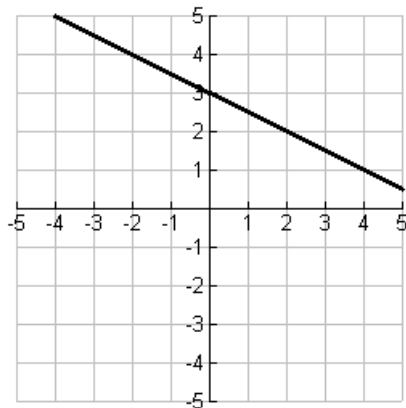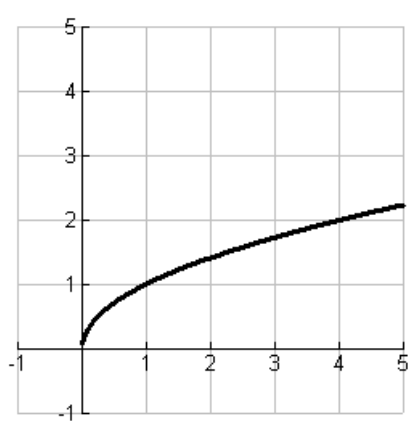
25.

26.

27.

28.

ANSWERS – Worksheet 7.4

1. $\{(-3, 1), (3, -2), (1, 5), (4, 6)\}$

2. $\{(7, -5), (-8, -6), (-2, 1), (3, 10)\}$

3. $y = \dfrac{x-2}{3}$

4. $y = -\dfrac{x+7}{5}$

5. $y = \dfrac{x+3}{12}$

6. $y = \dfrac{1}{8}x - 2$

7. $y = \dfrac{3}{2}x + \dfrac{15}{2}$

8. $y = -\dfrac{4}{3}x + \dfrac{20}{3}$

9. $y = -\dfrac{8}{5}x - 16$

10. $y = 2x - 16$

11. $y = \pm\sqrt{x-5}$

12. $y = \pm\sqrt{x+4}$

13. $y = -3 \pm \sqrt{x}$

14. $y = 6 \pm \sqrt{x}$

15. $y = x^2 + 2, \ x \geq 0$

16. $y = x^2 - 5, \ x \geq 0$

17. $y = (x-8)^2, \ x \geq 8$

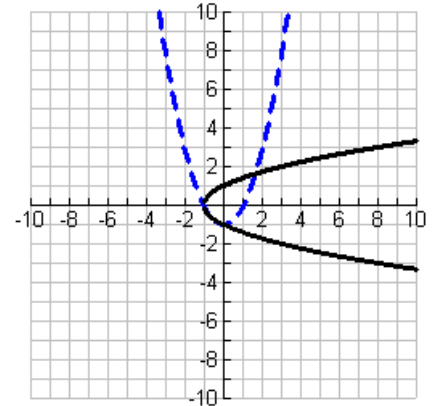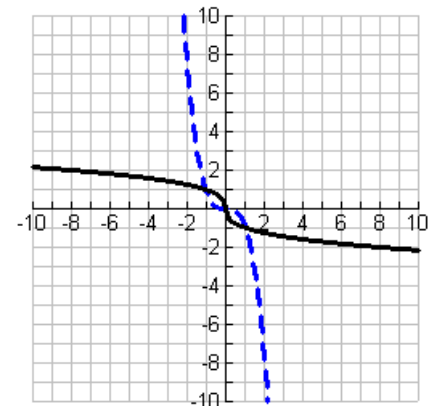18. $y = (x+7)^2, \ x \geq -7$

19. verify
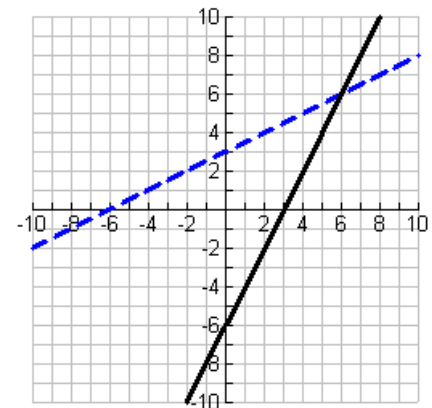
20. verify

21. verify

22. verify

23. verify

24. verify

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27.

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