

Algebra 2: Cumulative Review Homework 5

1. Solve: $1\frac{1}{4} = a + \frac{3}{8}$

$(\frac{5}{4} = a + \frac{3}{8}) \cdot 8$ $10 = 8a + 3$
 $7 = 8a$ $a = \frac{7}{8}$

- a. $\frac{7}{8}$ b. $-\frac{1}{2}$ c. $-\frac{7}{8}$ d. $1\frac{5}{8}$

2. Solve: $[\frac{1}{2}(15 + 7d) = -\frac{d}{4}] \cdot 4$

$2(15 + 7d) = -d$ $30 + 14d = -d$ $30 = -15d$
 $d = -2$

- a. 3 b. 2 c. -4 d. -2

3. Solve: $\frac{2x - 10 + 3x}{4} < -5$

$2x - 10 + 3x < -20$ $5x - 10 < -20$

$5x < -10$
 $x < -2$

- a. $x < -2$ c. $x < 6$
 b. $x > -2$ d. $x < 4$

4. Solve: $[\frac{3}{5} + x + \frac{4}{15} \geq \frac{6}{5}] \cdot 15$

$9 + 15x + 4 \geq 18$

$13 + 15x \geq 18$
 $15x \geq 5$ $x \geq \frac{1}{3}$

- a. $x \geq 2\frac{1}{15}$ b. $x \geq 1\frac{8}{15}$ c. $x \leq 1\frac{8}{15}$ d. $x \geq \frac{1}{3}$

5. Which relation is a function?

a.

x	y
3	8
5	10
6	6
9	-2

b.

x	y
3	8
5	10
3	6
9	-2

c.

x	y
3	8
5	10
6	6
5	-2

d.

x	y
6	8
5	10
6	6
9	-2

6. If $g(x) = x^2 + 4x - 5$, find $g(-4)$.

- a. -85 b. 27 c. 5 d. -5

$g(-4) = (-4)^2 + 4(-4) - 5$
 $= 16 - 16 - 5$
 $= -5$

7. What is the slope of the line that passes through (a, b) and $(-a, b)$.

- a. 0 b. $\frac{b}{a}$ c. $\frac{b}{2a}$ d. undefined

$m = \frac{\Delta y}{\Delta x} = \frac{b - b}{-a - a} = \frac{0}{-2a} = 0$

8. Write an equation of the line that passes through the points: $(-5, -2)$ and $(3, -1)$.

- a. $y = \frac{1}{8}x + \frac{11}{8}$ c. $y = -\frac{1}{8}x - \frac{11}{8}$ d. $y = \frac{1}{8}x + \frac{8}{11}$

$m = \frac{-1 - (-2)}{3 - (-5)} = \frac{1}{8}$

$y = mx + b$
 $-1 = \frac{1}{8}(3) + b$
 $-1 = \frac{3}{8} + b$ $b = -1\frac{1}{8}$

9. Find the product: $(-6k + 4)(-7k^2 + 2k - 7)$

- a. $-7k^2 - 4k - 3$ c. $-42k^3 - 40k^2 - 34k - 28$
 b. $42k^3 - 40k^2 + 50k - 28$ d. $-7k^2 - 12k - 28$

$42k^3 - 12k^2 + 42k$
 $-28k^2 + 8k - 28$

 $42k^3 - 40k^2 + 50k - 28$

10. Find the product: $(6g-4h)^2 = (6g-4h)(6g-4h) = 36g^2 - 24gh - 24gh + 16h^2 = 36g^2 - 48gh + 16h^2$

a. $36g^2 - 16gh + 16h^2$ c. $36g^2 - 48gh - 16h^2$
 b. $36g^2 + 16h^2$ **d.** $36g^2 - 48gh + 16h^2$

11. Simplify: $([3^2]^3 g^5 h^8)^2 = (9^3 g^5 h^8)^2 = 9^6 g^{10} h^{16}$

a. $729g^7 h^{10}$ b. $531,441g^7 h^{10}$ c. $729g^{10} h^{16}$ **d.** $531,441g^{10} h^{16}$

12. Simplify: $\frac{(2a^5 b)^2}{24b^6} = \frac{4a^{10} b^2}{24b^6} = \frac{a^{10}}{6b^4}$

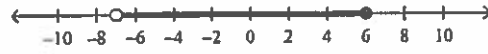
a. $\frac{a^{10} b^4}{6}$ b. $\frac{a^{10}}{12b^4}$ c. $\frac{a^7}{6b^4}$ **d.** $\frac{a^{10}}{6b^4}$

13. Factor: $3t^2 + 10t + 8 = (3t + 4)(t + 2)$

a. $(3t+6)(t+4)$ b. $(3t-4)(t-2)$ c. prime **d.** $(3t+4)(t+2)$

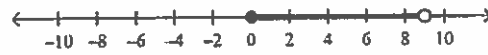
14. Solve and graph: $u + 8 \geq 1$ and $u - 3 < 3$

a. $-7 \leq u < 6$ c. $-7 \leq u < 6$ $u \geq -7$ and $u < 6$
 $-7 \leq u < 6$



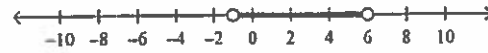
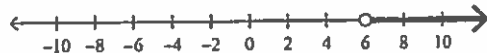
b. $0 \leq u < 9$

d. $0 \leq u < 9$



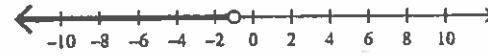
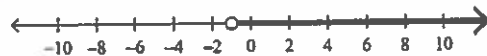
15. Solve and graph: $g - 7 > -1$ or $g + 3 > 2$

a. $g > 6$ c. $-1 < g < 6$ $g > 6$ or $g > -1$



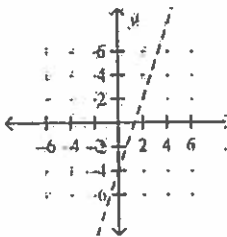
b. $g > -1$

d. $g < -1$

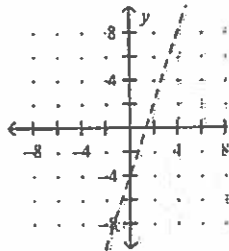


16. Graph: $y \leq 3x - 4$

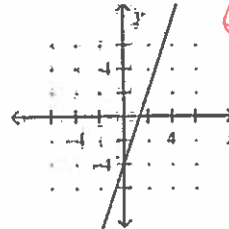
a.



b.



c.



d.

