

Accelerated Geometry

Summer Assignment

- ❖ The following assignment focuses on Algebra skills needed to be successful in the Accelerated Geometry course.
- ❖ Time Commitment – approximately 4 to 6 hours
- ❖ A short question period will be given on the first day of school.
- ❖ A quiz will be given on this material on the second day of school.
- ❖ This packet will be collected on the second day of school prior to the quiz. (You may keep the answer keys)
- ❖ This packet is worth 40 points and will be placed under the “Assignments/Performance Task” category which constitutes 15% of your grade.
- ❖ ALL WORK MUST BE SHOWN NEATLY FOR CREDIT ★★
- ❖ All answers are given in order to check for correctness.
- ❖ A calculator (scientific or graphing) is permitted for both the assignment and the quiz.

Multi-Step Equations

Solve each equation.

1) $-20 = -4x - 6x$

2) $6 = 1 - 2n + 5$

3) $8x - 2 = -9 + 7x$

4) $a + 5 = -5a + 5$

5) $4m - 4 = 4m$

6) $p - 1 = 5p + 3p - 8$

7) $5p - 14 = 8p + 4$

8) $p - 4 = -9 + p$

9) $-8 = -(x + 4)$

10) $12 = -4(-6x - 3)$

11) $14 = -(p - 8)$

12) $-(7 - 4x) = 9$

13) $-18 - 6k = 6(1 + 3k)$

14) $5n + 34 = -2(1 - 7n)$

15) $2(4x - 3) - 8 = 4 + 2x$

16) $3n - 5 = -8(6 + 5n)$

17) $-(1 + 7x) - 6(-7 - x) = 36$

18) $-3(4x + 3) + 4(6x + 1) = 43$

19) $24a - 22 = -4(1 - 6a)$

20) $-5(1 - 5x) + 5(-8x - 2) = -4x - 8x$

Solving Proportions

Solve each proportion.

1) $\frac{10}{8} = \frac{n}{10}$

2) $\frac{7}{5} = \frac{x}{3}$

3) $\frac{9}{6} = \frac{x}{10}$

4) $\frac{7}{n} = \frac{8}{7}$

5) $\frac{4}{3} = \frac{8}{x}$

6) $\frac{7}{b+5} = \frac{10}{5}$

7) $\frac{6}{b-1} = \frac{9}{7}$

8) $\frac{4}{m-8} = \frac{8}{2}$

9) $\frac{5}{6} = \frac{7n+9}{9}$

10) $\frac{4}{9} = \frac{r-3}{6}$

11) $\frac{7}{9} = \frac{b}{b-10}$

12) $\frac{9}{k-7} = \frac{6}{k}$

13) $\frac{4}{n+2} = \frac{7}{n}$

14) $\frac{n}{n-3} = \frac{2}{3}$

15) $\frac{x-3}{x} = \frac{9}{10}$

16) $\frac{5}{r-9} = \frac{8}{r+5}$

17) $\frac{p+10}{p-7} = \frac{8}{9}$

18) $\frac{2}{8} = \frac{n+4}{n-4}$

19) $\frac{n-5}{n+8} = \frac{2}{7}$

20) $\frac{n-6}{n-7} = \frac{9}{2}$

Solving Systems of Equations by Elimination

Solve each system by elimination.

1)
$$\begin{aligned} -4x - 2y &= -12 \\ 4x + 8y &= -24 \end{aligned}$$

2)
$$\begin{aligned} 4x + 8y &= 20 \\ -4x + 2y &= -30 \end{aligned}$$

3)
$$\begin{aligned} x - y &= 11 \\ 2x + y &= 19 \end{aligned}$$

4)
$$\begin{aligned} -6x + 5y &= 1 \\ 6x + 4y &= -10 \end{aligned}$$

5)
$$\begin{aligned} -2x - 9y &= -25 \\ -4x - 9y &= -23 \end{aligned}$$

6)
$$\begin{aligned} 8x + y &= -16 \\ -3x + y &= -5 \end{aligned}$$

7)
$$\begin{aligned} -6x + 6y &= 6 \\ -6x + 3y &= -12 \end{aligned}$$

8)
$$\begin{aligned} 7x + 2y &= 24 \\ 8x + 2y &= 30 \end{aligned}$$

9)
$$\begin{aligned} 5x + y &= 9 \\ 10x - 7y &= -18 \end{aligned}$$

10)
$$\begin{aligned} -4x + 9y &= 9 \\ x - 3y &= -6 \end{aligned}$$

11)
$$\begin{aligned} -3x + 7y &= -16 \\ -9x + 5y &= 16 \end{aligned}$$

12)
$$\begin{aligned} -7x + y &= -19 \\ -2x + 3y &= -19 \end{aligned}$$

Solving Systems of Equations by Substitution

Solve each system by substitution.

1) $y = 6x - 11$
 $-2x - 3y = -7$

2) $2x - 3y = -1$
 $y = x - 1$

3) $y = -3x + 5$
 $5x - 4y = -3$

4) $-3x - 3y = 3$
 $y = -5x - 17$

5) $y = -2$
 $4x - 3y = 18$

6) $y = 5x - 7$
 $-3x - 2y = -12$

7) $-4x + y = 6$
 $-5x - y = 21$

8) $-7x - 2y = -13$
 $x - 2y = 11$

9) $-5x + y = -2$
 $-3x + 6y = -12$

10) $-5x + y = -3$
 $3x - 8y = 24$

Finding Slope From Two Points

Find the slope of the line through each pair of points.

1) $(19, -16), (-7, -15)$

2) $(1, -19), (-2, -7)$

3) $(-4, 7), (-6, -4)$

4) $(20, 8), (9, 16)$

5) $(17, -13), (17, 8)$

6) $(19, 3), (20, 3)$

7) $(3, 0), (-11, -15)$

8) $(19, -2), (-11, 10)$

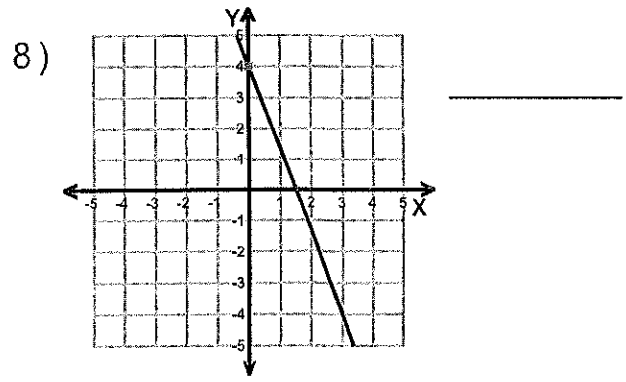
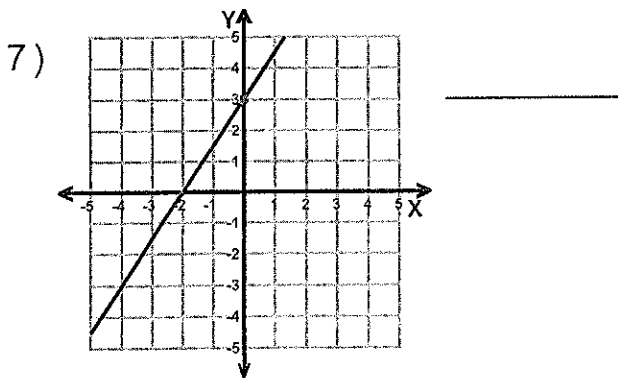
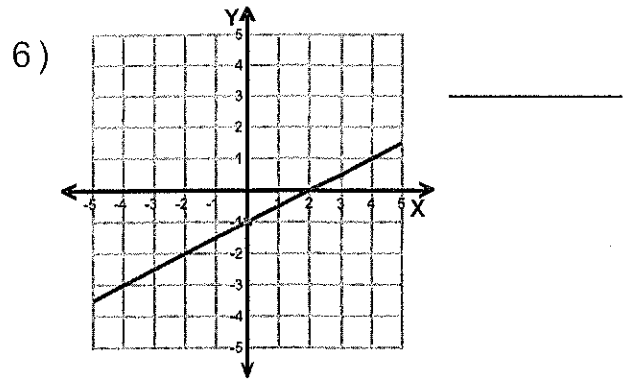
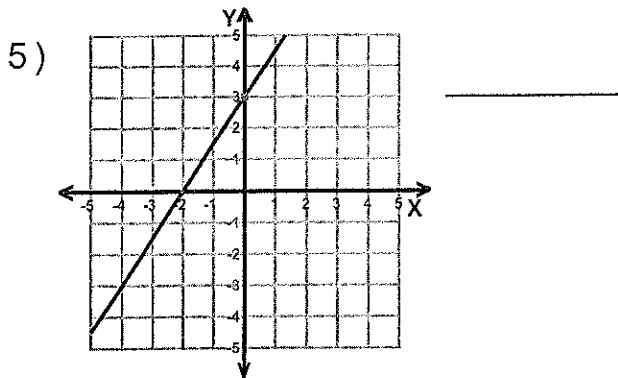
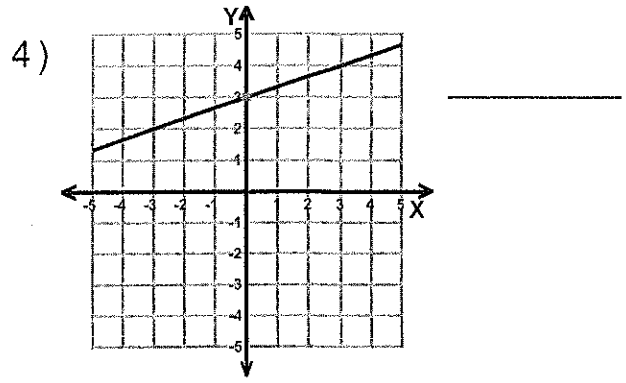
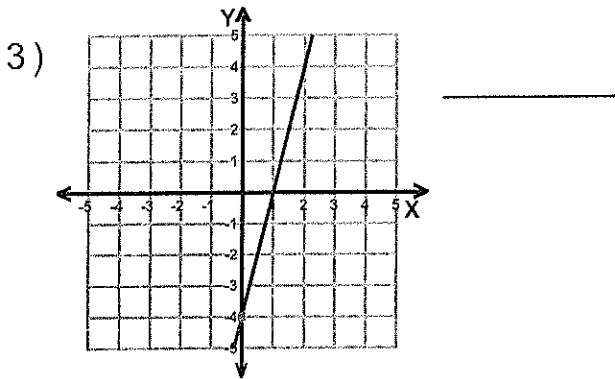
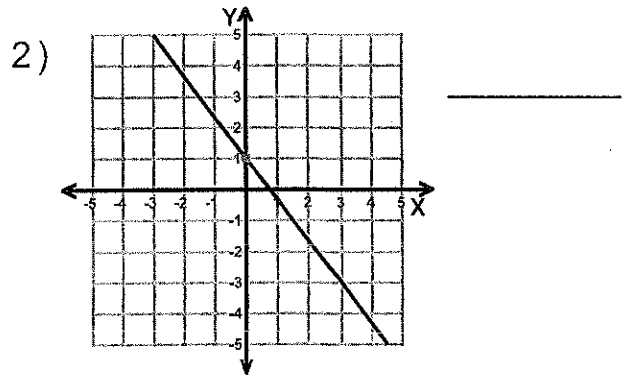
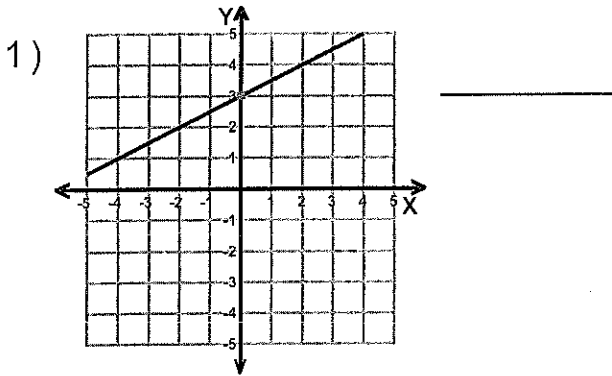
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Write the Equation from Each Line



Writing Equations given two points. Find the slope m and then find the Y intercept b .

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Write the slope-intercept form of the equation of the line through the given points.

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1) through: $(2, 5)$ and $(0, 1)$

2) through: $(1, -5)$ and $(5, -1)$

3) through: $(0, 5)$ and $(-1, 2)$

4) through: $(3, 2)$ and $(5, 4)$

5) through: $(-2, 2)$ and $(-1, 3)$

6) through: $(0, -1)$ and $(1, 3)$

7) through: $(1, -4)$ and $(0, -1)$

8) through: $(-4, 4)$ and $(-5, 2)$

9) through: $(0, 2)$ and $(-4, -2)$

10) through: $(2, -5)$ and $(0, 1)$

Simplifying Radical Expressions

Simplify.

1) $\sqrt{125n}$

2) $\sqrt{216v}$

3) $\sqrt{512k^2}$

4) $\sqrt{512m^3}$

5) $\sqrt{216k^4}$

6) $\sqrt{100v^3}$

7) $\sqrt{80p^3}$

8) $\sqrt{45p^2}$

9) $\sqrt{147m^3n^3}$

10) $\sqrt{200m^4n}$

11) $\sqrt{75x^2y}$

12) $\sqrt{64m^3n^3}$

13) $\sqrt{16u^4v^3}$

14) $\sqrt{28x^3y^3}$

Multiplying Radical Expressions

Simplify.

1) $3\sqrt{12} \cdot \sqrt{6}$

2) $\sqrt{5} \cdot \sqrt{10}$

3) $\sqrt{6} \cdot \sqrt{6}$

4) $\sqrt{5} \cdot -4\sqrt{20}$

5) $-4\sqrt{15} \cdot -\sqrt{3}$

6) $\sqrt{20x^2} \cdot \sqrt{20x}$

7) $\sqrt{15n^2} \cdot \sqrt{10n^3}$

8) $\sqrt{18a^2} \cdot 4\sqrt{3a^2}$

9) $-3\sqrt{7r^3} \cdot 6\sqrt{7r^2}$

10) $-4\sqrt{28x} \cdot \sqrt{7x^3}$

11) $\sqrt{3}(5 + \sqrt{3})$

12) $2\sqrt{5}(\sqrt{6} + 2)$

13) $-3\sqrt{3}(2 + \sqrt{6})$

14) $\sqrt{3}(-5\sqrt{10} + \sqrt{6})$

Solving Quadratic Equations by Factoring

Solve each equation by factoring.

$$1) (k+1)(k-5) = 0$$

$$2) (a+1)(a+2) = 0$$

$$3) (4k+5)(k+1) = 0$$

$$4) (2m+3)(4m+3) = 0$$

$$5) x^2 - 11x + 19 = -5$$

$$6) n^2 + 7n + 15 = 5$$

$$7) (10n+22) = 0$$

$$8) n^2 + 3n - 12 = 6$$

$$9) 6n^2 - 18n - 18 = 6$$

$$10) 7r^2 - 14r = -7$$

11) $n^2 + 8n = -15$

12) $5r^2 - 44r + 120 = -30 + 11r$

13) $-4k^2 - 8k - 3 = -3 - 5k^2$

~~11) $5r^2 - 44r + 120 = -30 + 11r$~~

15) $3r^2 - 16r - 7 = 5$

~~11) $5r^2 - 44r + 120 = -30 + 11r$~~

17) $7k^2 - 6k + 3 = 3$

18) $35k^2 - 22k + 7 = 4$

19) $7x^2 + 2x = 0$

20) $10b^2 = 27b - 18$

21) $8x^2 + 21 = -59x$

22) $15a^2 - 3a = 3 - 7a$

Multi-Step Equations

Solve each equation.

1) $-20 = -4x - 6x$

{2}

2) $6 = 1 - 2n + 5$

{0}

ANSWERS

3) $8x - 2 = -9 + 7x$

{-7}

4) $a + 5 = -5a + 5$

{0}

5) $4m - 4 = 4m$

No solution.

6) $p - 1 = 5p + 3p - 8$

{1}

7) $5p - 14 = 8p + 4$

{-6}

8) $p - 4 = -9 + p$

No solution.

9) $-8 = -(x + 4)$

{4}

10) $12 = -4(-6x - 3)$

{0}

11) $14 = -(p - 8)$

{-6}

12) $-(7 - 4x) = 9$

{4}

13) $-18 - 6k = 6(1 + 3k)$

{-1}

14) $5n + 34 = -2(1 - 7n)$

{4}

15) $2(4x - 3) - 8 = 4 + 2x$

{3}

16) $3n - 5 = -8(6 + 5n)$

{-1}

17) $-(1 + 7x) - 6(-7 - x) = 36$

{5}

18) $-3(4x + 3) + 4(6x + 1) = 43$

{4}

19) $24a - 22 = -4(1 - 6a)$

No solution.

20) $-5(1 - 5x) + 5(-8x - 2) = -4x - 8x$

{-5}

Solving Proportions

Solve each proportion.

1) $\frac{10}{8} = \frac{n}{10}$
{12.5}

2) $\frac{7}{5} = \frac{x}{3}$
{4.2}

ANSWERS

3) $\frac{9}{6} = \frac{x}{10}$
{15}

4) $\frac{7}{n} = \frac{8}{7}$
{6.12}

5) $\frac{4}{3} = \frac{8}{x}$
{6}

6) $\frac{7}{b+5} = \frac{10}{5}$
{-1.5}

7) $\frac{6}{b-1} = \frac{9}{7}$
{5.66}

8) $\frac{4}{m-8} = \frac{8}{2}$
{9}

9) $\frac{5}{6} = \frac{7n+9}{9}$
{-0.21}

10) $\frac{4}{9} = \frac{r-3}{6}$
{5.66}

ANSWERS ³

$$11) \frac{7}{9} = \frac{b}{b-10}$$

{-35}

$$12) \frac{9}{k-7} = \frac{6}{k}$$

{-14}

$$13) \frac{4}{n+2} = \frac{7}{n}$$

{-4.66}

$$14) \frac{n}{n-3} = \frac{2}{3}$$

{-6}

$$15) \frac{x-3}{x} = \frac{9}{10}$$

{30}

$$16) \frac{5}{r-9} = \frac{8}{r+5}$$

{32.33}

$$17) \frac{p+10}{p-7} = \frac{8}{9}$$

{-146}

$$18) \frac{2}{8} = \frac{n+4}{n-4}$$

{-6.66}

$$19) \frac{n-5}{n+8} = \frac{2}{7}$$

{10.19}

$$20) \frac{n-6}{n-7} = \frac{9}{2}$$

{7.28}

Solving Systems of Equations by Elimination

Solve each system by elimination.

1) $-4x - 2y = -12$

$4x + 8y = -24$

$(6, -6)$

2) $4x + 8y = 20$

$-4x + 2y = -30$

$(7, -1)$

ANSWERS

3) $x - y = 11$

$2x + y = 19$

$(10, -1)$

4) $-6x + 5y = 1$

$6x + 4y = -10$

$(-1, -1)$

5) $-2x - 9y = -25$

$-4x - 9y = -23$

$(-1, 3)$

6) $8x + y = -16$

$-3x + y = -5$

$(-1, -8)$

7) $-6x + 6y = 6$

$-6x + 3y = -12$

$(5, 6)$

8) $7x + 2y = 24$

$8x + 2y = 30$

$(6, -9)$

9) $5x + y = 9$

$10x - 7y = -18$

$(1, 4)$

10) $-4x + 9y = 9$

$x - 3y = -6$

$(9, 5)$

11) $-3x + 7y = -16$

$-9x + 5y = 16$

$(-4, -4)$

12) $-7x + y = -19$

$-2x + 3y = -19$

$(2, -5)$

Solving Systems of Equations by Substitution

Solve each system by substitution.

1) $y = 6x - 11$
 $-2x - 3y = -7$

 $(2, 1)$

2) $2x - 3y = -1$
 $y = x - 1$

 $(4, 3)$ ANSWERS

3) $y = -3x + 5$
 $5x - 4y = -3$

 $(1, 2)$

4) $-3x - 3y = 3$
 $y = -5x - 17$

 $(-4, 3)$

5) $y = -2$
 $4x - 3y = 18$

 $(3, -2)$

6) $y = 5x - 7$
 $-3x - 2y = -12$

 $(2, 3)$

7) $-4x + y = 6$
 $-5x - y = 21$

 $(-3, -6)$

8) $-7x - 2y = -13$
 $x - 2y = 11$

 $(3, -4)$

9) $-5x + y = -2$
 $-3x + 6y = -12$

 $(0, -2)$

10) $-5x + y = -3$
 $3x - 8y = 24$

 $(0, -3)$

Finding Slope From Two Points

Find the slope of the line through each pair of points.

1) $(19, -16), (-7, -15)$

$$-\frac{1}{26}$$

2) $(1, -19), (-2, -7)$

$$-4$$

ANSWERS

3) $(-4, 7), (-6, -4)$

$$\frac{11}{2}$$

4) $(20, 8), (9, 16)$

$$-\frac{8}{11}$$

5) $(17, -13), (17, 8)$

Undefined

6) $(19, 3), (20, 3)$

0

7) $(3, 0), (-11, -15)$

$$\frac{15}{14}$$

8) $(19, -2), (-11, 10)$

$$-\frac{2}{5}$$

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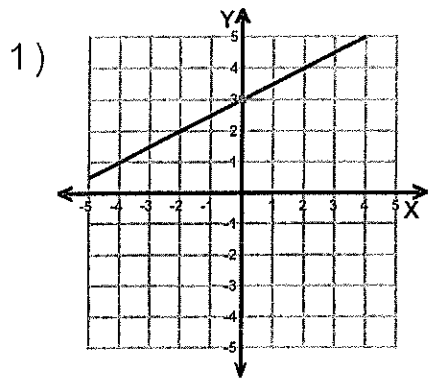
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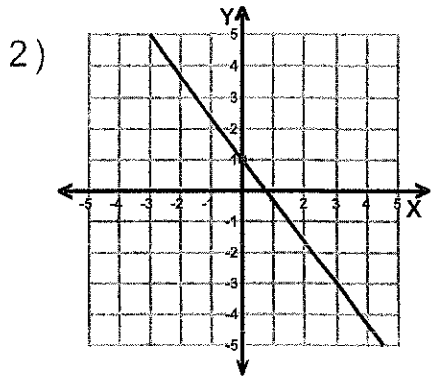
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ANSWERS

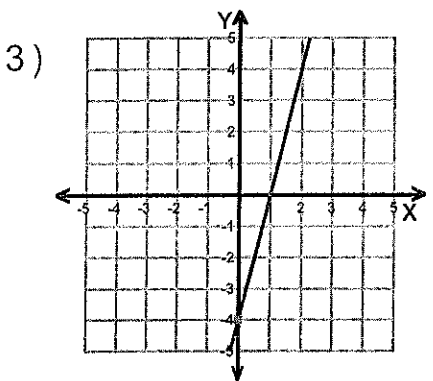
Write the Equation from Each Line



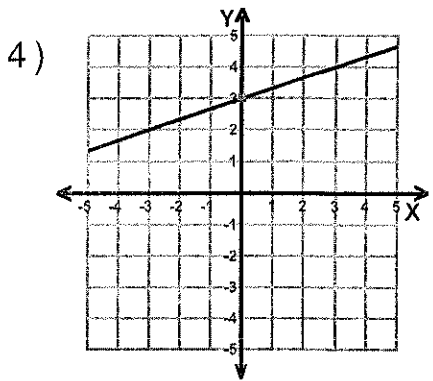
$y = \frac{1}{2}x + 3$



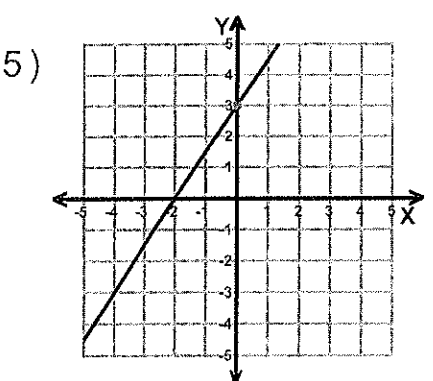
$y = -\frac{4}{3}x + 1$



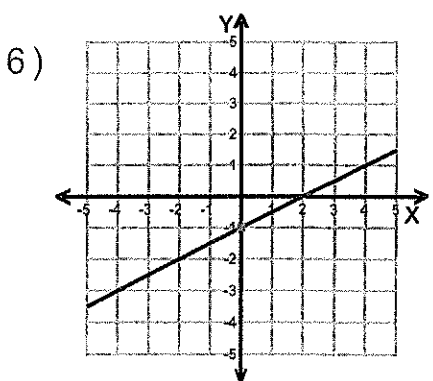
$y = 4x - 4$



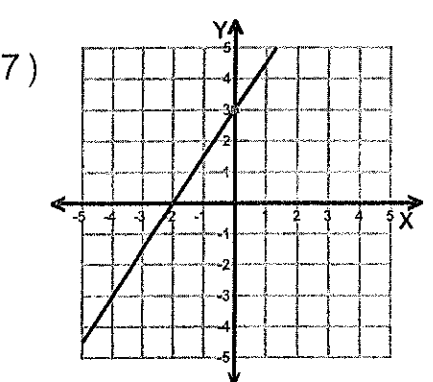
$y = \frac{1}{3}x + 3$



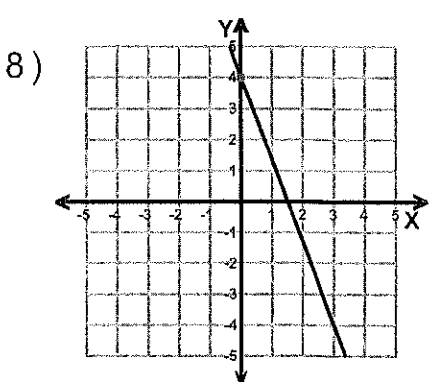
$y = \frac{3}{2}x + 3$



$y = \frac{1}{2}x - 1$



$y = \frac{3}{2}x + 3$



$y = -\frac{8}{3}x + 4$



Writing Equations given two points. Find the slope m and then find the Y intercept b .

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Write the slope-intercept form of the equation of the line through the given points.

8

1) through: $(2, 5)$ and $(0, 1)$

$$y = 2x + 1$$

2) through: $(1, -5)$ and $(5, -1)$

$$y = x - 6$$

ANSWERS

3) through: $(0, 5)$ and $(-1, 2)$

$$y = 3x + 5$$

4) through: $(3, 2)$ and $(5, 4)$

$$y = x - 1$$

5) through: $(-2, 2)$ and $(-1, 3)$

$$y = x + 4$$

6) through: $(0, -1)$ and $(1, 3)$

$$y = 4x - 1$$

7) through: $(1, -4)$ and $(0, -1)$

$$y = -3x - 1$$

8) through: $(-4, 4)$ and $(-5, 2)$

$$y = 2x + 12$$

9) through: $(0, 2)$ and $(-4, -2)$

$$y = x + 2$$

10) through: $(2, -5)$ and $(0, 1)$

$$y = -3x + 1$$

Simplifying Radical Expressions

Simplify.

$$1) \frac{\sqrt{125n}}{5\sqrt{5n}}$$

$$2) \frac{\sqrt{216v}}{6\sqrt{6v}}$$

ANSWERS

$$3) \frac{\sqrt{512k^2}}{16k\sqrt{2}}$$

$$4) \frac{\sqrt{512m^3}}{16m\sqrt{2m}}$$

$$5) \frac{\sqrt{216k^4}}{6k^2\sqrt{6}}$$

$$6) \frac{\sqrt{100v^3}}{10v\sqrt{v}}$$

$$7) \frac{\sqrt{80p^3}}{4p\sqrt{5p}}$$

$$8) \frac{\sqrt{45p^2}}{3p\sqrt{5}}$$

$$9) \frac{\sqrt{147m^3n^3}}{7m \cdot n\sqrt{3mn}}$$

$$7mn\sqrt{3mn}$$

$$10) \frac{\sqrt{200m^4n}}{10m^2\sqrt{2n}}$$

$$11) \frac{\sqrt{75x^2y}}{5x\sqrt{3y}}$$

$$12) \frac{\sqrt{64m^3n^3}}{8m \cdot n\sqrt{mn}}$$

$$8mn\sqrt{mn}$$

$$13) \frac{\sqrt{16u^4v^3}}{4u^2 \cdot v\sqrt{v}}$$

$$4u^2v\sqrt{v}$$

$$14) \frac{\sqrt{28x^3y^3}}{2x \cdot y\sqrt{7xy}}$$

$$2xy\sqrt{7xy}$$

Multiplying Radical Expressions

Simplify.

$$1) \frac{3\sqrt{12} \cdot \sqrt{6}}{18\sqrt{2}}$$

$$2) \frac{\sqrt{5} \cdot \sqrt{10}}{5\sqrt{2}}$$

ANSWERS

$$3) \frac{\sqrt{6} \cdot \sqrt{6}}{6}$$

$$4) \frac{\sqrt{5} \cdot -4\sqrt{20}}{-40}$$

$$5) \frac{-4\sqrt{15} \cdot -\sqrt{3}}{12\sqrt{5}}$$

$$6) \frac{\sqrt{20x^2} \cdot \sqrt{20x}}{20x\sqrt{x}}$$

$$7) \frac{\sqrt{15n^2} \cdot \sqrt{10n^3}}{5n^2\sqrt{6n}}$$

$$8) \frac{\sqrt{18a^2} \cdot 4\sqrt{3a^2}}{12a^2\sqrt{6}}$$

$$9) \frac{-3\sqrt{7r^3} \cdot 6\sqrt{7r^2}}{-126r^2\sqrt{r}}$$

$$10) \frac{-4\sqrt{28x} \cdot \sqrt{7x^3}}{-56x^2}$$

$$11) \frac{\sqrt{3}(5 + \sqrt{3})}{5\sqrt{3} + 3}$$

$$12) \frac{2\sqrt{5}(\sqrt{6} + 2)}{2\sqrt{30} + 4\sqrt{5}}$$

$$13) \frac{-3\sqrt{3}(2 + \sqrt{6})}{-6\sqrt{3} - 9\sqrt{2}}$$

$$14) \frac{\sqrt{3}(-5\sqrt{10} + \sqrt{6})}{-5\sqrt{30} + 3\sqrt{2}}$$

Solving Quadratic Equations by Factoring

Solve each equation by factoring.

~~1) $(k+1)(k-5) = 0$~~

~~$\{-1, 5\}$~~

~~2) $(a+1)(a+2) = 0$~~

~~$\{-1, -2\}$~~

3) $(4k+5)(k+1) = 0$

$\left\{-\frac{5}{4}, -1\right\}$

4) $(2m+3)(4m+3) = 0$

$\left\{-\frac{3}{2}, -\frac{3}{4}\right\}$

5) $x^2 - 11x + 19 = -5$

$\{3, 8\}$

6) $n^2 + 7n + 15 = 5$

$\{-5, -2\}$

~~7) $n^2 - 10n + 22 = -2$~~

~~$\{1\}$~~

8) $n^2 + 3n - 12 = 6$

$\{3, -6\}$

9) $6n^2 - 18n - 18 = 6$

$\{4, -1\}$

10) $7r^2 - 14r = -7$

$\{1\}$

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12

11) $n^2 + 8n = -15$

$\{-5, -3\}$

12) $5r^2 - 44r + 120 = -30 + 11r$

$\{6, 5\}$

13) $-4k^2 - 8k - 3 = -3 - 5k^2$

$\{8, 0\}$

14) $b^2 + 5b - 35 = 3b$

$\{-7, 5\}$

15) $3r^2 - 16r - 7 = 5$

$\{-\frac{2}{3}, 6\}$

16) $6b^2 - 13b + 3 = -3$

$\{\frac{2}{3}, 1\}$

17) $7k^2 - 6k + 3 = 3$

$\{\frac{6}{7}, 0\}$

18) $35k^2 - 22k + 7 = 4$

$\{\frac{1}{5}, \frac{3}{7}\}$

19) $7x^2 + 2x = 0$

$\{-\frac{2}{7}, 0\}$

20) $10b^2 = 27b - 18$

$\{\frac{6}{5}, \frac{3}{2}\}$

21) $8x^2 + 21 = -59x$

$\{-\frac{3}{8}, -7\}$

22) $15a^2 - 3a = 3 - 7a$ $\{\frac{1}{3}, -\frac{3}{5}\}$

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