

CHAPTER TEST FORMS

CHAPTER ONE, FORM A

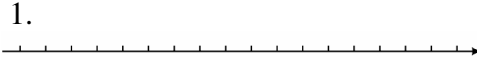
INTERMEDIATE ALGEBRA

NAME _____

SECTION _____

1. Graph the set on a number line.

$$\left\{-3, -0.5, 0, \frac{5}{2}, \sqrt{16}\right\}$$



For Exercises 2-5, Let $A = \left\{\sqrt{25}, 4, \frac{0}{2}, 4.3, \frac{35}{7}, -2, -\sqrt{3}\right\}$. First simplify each element as needed, and then list the elements from A that belong to the set.

2. Whole Numbers 2. _____

3. Integers 3. _____

4. Rational Numbers 4. _____

5. Real Numbers 5. _____

For Exercises 6-7, write the set in interval notation and graph it.

6. $\{x | x < -4\}$ 6. _____


7. $\{x | -3 \leq x \leq 1\}$ 7. _____


In Exercises 8-13, perform the indicated operations.

8. $7^2 - 4(8) + (-2)^3 + 9$ 8. _____

9. $-7 + 9 + (-9) + (-7)$ 9. _____

10. $5 + \frac{-20}{2} + 5 \cdot 3 + 3(-6)$ 10. _____

11. $\frac{(-4)(-6)+-4}{\sqrt{36}-2}$ 11. _____

12. $-\frac{[1+2-(-7+4)]}{\sqrt{4}(-1+4)}$ 12. _____

13. $\frac{2 \cdot 2^4 + 5(-9) - 2(-1)}{3(-2)^3 + 1}$ 13. _____

Projected resident population changes from July 1, 1995, to July 1, 2000, for selected states are shown here. Use this data to answer questions 14-16.

State	2000 Population	Change From 1995
District of Columbia	530,000	-4.3%
Indiana	6,060,000	+4.4%
New York	18,174,000	+0.2%
Rhode Island	989,000	-0.1%
South Dakota	770,000	+5.6%
Texas	20,178,000	+7.7%

Source: <http://www.census.gov/population/projections/state/stjpop.txt>

14. What are largest and smallest changes from 1995 in the given list? 14. _____

15. Which changes have the largest and smallest absolute values? 15. _____

16. Is the difference in change for Texas and the District of Columbia positive or negative? Show the work that led to your answer. _____

For Exercises 17-19, find the square root. If the number is not real, say so.

17. $-\sqrt{289}$ 17. _____

18. $\sqrt{-49}$ 18. _____

19. $\sqrt{81}$ 19. _____

20. Under what conditions will \sqrt{a} be a real number? 20. _____

21. Evaluate $\frac{m^2 + 9k}{r - 4}$ if $k = -5, m = -2$, and $r = 49$. 21. _____

22. Use the properties of real numbers to simplify the following:
 $4(6 - 7d) + 3(4d + 5) + 4 - 3d$ 22. _____

23. In simplifying $(3x - 2) - (4x - 5)$, how is the associative property used? What is the simplified form? 23. _____

In Exercises 24-30, match the statement with the appropriate property. Answers may be used more than once.

- | | | |
|----------------------------------|------------------------------------|-----------|
| 24. $-\frac{1}{3}(-3) = 1$ | A. Distributive Property | 24. _____ |
| 25. $(-5) + 0 = -5$ | B. Inverse Property | 25. _____ |
| 26. $(3 + 2m)4 = 4(3 + 2m)$ | C. Identity Property | 26. _____ |
| 27. $8y^2 \cdot 0 = 0$ | D. Associative Property | 27. _____ |
| 28. $p = p \cdot 1$ | E. Commutative Property | 28. _____ |
| 29. $-3t^2 + 2t^2 = (-3 + 2)t^2$ | F. Multiplication Property of Zero | 29. _____ |
| 30. $4 + (6 + c) = (4 + 6) + c$ | | 30. _____ |

CHAPTER ONE, FORM B

INTERMEDIATE ALGEBRA

NAME _____

SECTION _____

1. Graph the set on a number line.

$$\left\{-1, -3.5, 0, \frac{5}{3}, -\sqrt{4}\right\}$$

1.



For Exercises 2-5, Let $A = \left\{\sqrt{36}, -4, \frac{0}{7}, 3.5, \frac{35}{5}, -2, -\sqrt{2}\right\}$. First simplify each element as needed, and then list the elements from A that belong to the set.

2. Whole Numbers 2. _____

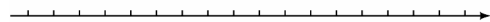
3. Integers 3. _____

4. Rational Numbers 4. _____

5. Real Numbers 5. _____

For Exercises 6-7, write the set in interval notation and graph it.

- 6.
- $\{x \mid x \leq -1\}$
6. _____



- 7.
- $\{x \mid -5 < x < -2\}$
7. _____



In Exercises 8-13, perform the indicated operations.

- 8.
- $-21 - (-10) + 10$
8. _____

- 9.
- $4 - 3 \cdot 5 + (-8)3 - \frac{24}{6}$
9. _____

- 10.
- $-3^4 + (-2)(-6) - (-13) - (-2)^5$
10. _____

11. $\frac{9+(-17)-2}{\sqrt{16}(-3)}$ 11. _____

12. $\frac{5[1-(-15+13)]}{\sqrt{16}(-4+6)}$ 12. _____

13. $\frac{2 \cdot 6 - \sqrt{49}[3 - (-2)]}{-2^3 - 3}$ 13. _____

Projected resident population changes from July 1, 1995, to July 1, 2000, for selected states are shown here. Use this data to answer questions 14-16.

State	2000 Population	Change From 1995
California	32,423,000	+2.6%
District of Columbia	530,000	-4.3%
Indiana	6,060,000	+4.4%
Montana	937,000	+7.7%
Rhode Island	989,000	-0.1%
South Dakota	770,000	+5.6%
West Virginia	1,833,000	+0.2%

Source: <http://www.census.gov/population/projections/state/stjpop.txt>

14. What are largest and smallest changes from 1995 in the given list? 14. _____

15. Which changes have the largest and smallest absolute values? 15. _____

16. Is the difference in change for Montana and the District of Columbia positive or negative? Show the work that led to your answer. 16. _____

For Exercises 17-19, find the square root. If the number is not real, say so.

17. $-\sqrt{121}$ 17. _____

18. $\sqrt{-900}$ 18. _____

19. $\sqrt{169}$ 19. _____

20 CHAPTER ONE, FORM B

20. Under what conditions will a^n represent a positive number? 20. _____

21. Evaluate $\frac{k^2 - 3m}{r - 2k}$
if $k = 5, m = -2,$ and $r = 9.$ 21. _____

22. Use the properties of real numbers to simplify the following:
 $7 - 7(3c - 2) + 4(c - 7) + 3c$ 22. _____

23. In simplifying $(2d - 1) - (7d - 4),$ how is the distributive property used? What is the simplified form? 23. _____

In Exercises 24-30, match the statement with the appropriate property. Answers may be used more than once.

- | | | |
|-----------------------------------|------------------------------------|-----------|
| 24. $x \cdot 1 = 1$ | A. Distributive Property | 24. _____ |
| 25. $3 \cdot w = w \cdot 3$ | B. Inverse Property | 25. _____ |
| 26. $2.3 + 0 = 2.3$ | C. Identity Property | 26. _____ |
| 27. $(3 \cdot 4)y = 3 \cdot (4y)$ | D. Associative Property | 27. _____ |
| 28. $0(6) = 0$ | E. Commutative Property | 28. _____ |
| 29. $-5 + 5 = 0$ | F. Multiplication Property of Zero | 29. _____ |
| 30. $3a + 6b = 3(a + 2b)$ | | 30. _____ |

CHAPTER ONE, FORM C

INTERMEDIATE ALGEBRA

NAME _____

SECTION _____

1. Graph the set on a number line.

$$\left\{-3, -1.5, 0, \frac{8}{3}, \sqrt{16}\right\}$$

1.



For Exercises 2-5, Let $A = \left\{-\sqrt{121}, 4, \frac{14}{7}, 3.5, -\frac{36}{18}, -1, -\sqrt{11}\right\}$. First simplify each element as needed, and then list the elements from A that belong to the set.

2. Whole Numbers 2. _____

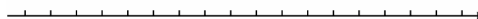
3. Integers 3. _____

4. Rational Numbers 4. _____

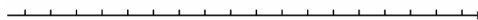
5. Real Numbers 5. _____

For Exercises 6-7, write the set in interval notation and graph it.

6. $\{x | x \geq -5\}$ 6. _____



7. $\{x | -6 < x \leq 0\}$ 7. _____



In Exercises 8-13, perform the indicated operations.

8. $75 - 5^3 + 2(3) + (-3)^3$ 8. _____

9. $-13 + 9 + (-11)$ 9. _____

10. $\frac{-18}{-2} - (3)(-2) + 3 \cdot 4 + 5$ 10. _____

11. $\frac{-9(9-3)}{2^4-7}$ 11. _____

12. $\frac{2\sqrt{36}-3\sqrt{16}}{-2\cdot 5+(-3)+(-5)\sqrt{64}}$ 12. _____

13. $3[36-4(-3)]+3^2-(4-9)$ 13. _____

Projected resident population changes from July 1, 1995, to July 1, 2000, for selected states are shown here. Use this data to answer questions 14-16.

State	2000 Population	Change From 1995
Alaska	632,000	+4.6%
California	32,423,000	+2.6%
Connecticut	3,286,000	+0.3%
District of Columbia	530,000	-4.3%
Montana	937,000	+7.7%
Rhode Island	989,000	-0.1%
South Dakota	770,000	+5.6%

Source: <http://www.census.gov/population/projections/state/stpjjpop.txt>

14. What are largest and smallest changes from 1995 in the given list? 14. _____

15. Which changes have the largest and smallest absolute values? 15. _____

16. Is the difference in change for Alaska and Rhode Island positive or negative? Show the work that led to your answer. 16. _____

For Exercises 17-19, find the square root. If the number is not real, say so.

17. $-\sqrt{-289}$ 17. _____

18. $\sqrt{361}$ 18. _____

19. $\sqrt{0.16}$ 19. _____

20. Under what conditions will a^n represent a negative number? 20. _____

21. Evaluate $5m - \sqrt{r} + k$
 if $k = -3, m = -5$, and $r = 49$. 21. _____

22. Use the properties of real numbers to simplify the following:
 $-(3y - 4) + 13 + 2(13y - 5) - 3y$ 22. _____

23. In simplifying $(3d - 2) - (6d - 11)$, how is the commutative property used? What is the simplified form? 23. _____

In Exercises 24-30, match the statement with the appropriate property. Answers may be used more than once.

24. $\left(-\frac{2}{5}\right)\left(-\frac{5}{2}\right) = 1$ A. Distributive Property 24. _____

25. $(5 \cdot 3)t = 5 \cdot (3t)$ B. Inverse Property 25. _____

26. $(7 + 9)0 = 0$ C. Identity Property 26. _____

27. $4z^2 + 0 = 4z^2$ D. Associative Property 27. _____

28. $-5a + 5a = 0$ E. Commutative Property 28. _____

29. $5a + 5c = 5(a + c)$ F. Multiplication Property of Zero 29. _____

30. $11 + (12 + 13) = (11 + 12) + 13$ 30. _____

CHAPTER ONE, FORM D

INTERMEDIATE ALGEBRA

NAME _____

SECTION _____

1. Graph the set on a number line.

$$\left\{3.5, -1.25, 5, -\frac{9}{2}, \sqrt{4}\right\}$$

1.



For Exercises 2-5, Let $A = \left\{\sqrt{2}, 7, -\frac{6}{2}, -6.1, \frac{0}{18}, -7, \frac{5}{8}\right\}$. First simplify each element as needed, and then list the elements from A that belong to the set.

2. Whole Numbers

2. _____

3. Integers

3. _____

4. Rational Numbers

4. _____

5. Real Numbers

5. _____

For Exercises 6-7, write the set in interval notation and graph it.

- 6.
- $\{x \mid x < 1\}$

6. _____



- 7.
- $\{x \mid -4 \leq x < 4\}$

7. _____



In Exercises 8-13, perform the indicated operations.

- 8.
- $-9 - 11 - (-20)$

8. _____

- 9.
- $8 - \frac{14}{-7} + (2)(-3) - (-9)$

9. _____

10. $7 - 7(2) - 3^2 + (-2)^4$ 10. _____

11. $\frac{-9(9-3)}{2^4 - 7}$ 11. _____

12. $\frac{9 \cdot 5 + 1 - 2 \cdot 3^2}{(-\sqrt{4})(-\sqrt{36}) - 2}$ 12. _____

13. $\left[\frac{9 - (-1)}{3 + (-2)^3} \right] \left[\frac{11 + (-20)}{(-2) - (-5)} \right]$ 13. _____

Projected resident population changes from July 1, 1995, to July 1, 2000, for selected states are shown here. Use this data to answer questions 14-16.

State	2000 Population	Change From 1995
Alaska	632,000	+4.6%
California	32,423,000	+2.6%
Connecticut	3,286,000	+0.3%
District of Columbia	530,000	-4.3%
Montana	937,000	+7.7%
Rhode Island	989,000	-0.1%
Wisconsin	5,324,000	+3.9%

Source: <http://www.census.gov/population/projections/state/stpjpop.txt>

14. What are largest and smallest changes from 1995 in the given list? 14. _____

15. Which changes have the largest and smallest absolute values? 15. _____

16. Is the difference in change for Wisconsin and California positive or negative? Show the work that led to your answer.

For Exercises 17-19, find the root. If the number is not real, say so.

17. $\sqrt{-1600}$ 17. _____

18. $\sqrt{196}$ 18. _____

19. $-\sqrt{0.36}$ 19. _____

26 CHAPTER ONE, FORM D

20. Under what conditions will \sqrt{a} not represent a real number? 20. _____

21. Evaluate $6m - \sqrt{r} - 3k$
 if $k = -14, m = -5$, and $r = 121$. 21. _____

22. Use the properties of real numbers to simplify the following:
 $3(b - 4) - 5 - 7(2b - 5) + 7b$ 22. _____

23. In simplifying $(4d + 8) - (2d + 8)$, how is the inverse property used? What is the simplified form? 23. _____

In Exercises 24-30, match the statement with the appropriate property. Answers may be used more than once.

24. $0(a - 7) = 0$ A. Distributive Property 24. _____

25. $13\left(\frac{1}{13}\right) = 1$ B. Inverse Property 25. _____

26. $1(3q) = 3q$ C. Identity Property 26. _____

27. $2[y(-3)] = 2[(-3)y]$ D. Associative Property 27. _____

28. $-6(m - 3) = -6m + 18$ E. Commutative Property 28. _____

29. $(4 + 5) + 9 = 4 + (5 + 9)$ F. Multiplication Property of Zero 29. _____

30. $(t^2)4 = 4(t^2)$ 30. _____

CHAPTER ONE, FORM E

INTERMEDIATE ALGEBRA

NAME _____

SECTION _____

For Exercises 1-4, Let $A = \left\{ \frac{\sqrt{2}}{2}, \frac{9}{0}, -\frac{24}{3}, 2.25, \frac{0}{9}, -1, \sqrt{25}, 4 \right\}$. First simplify each element as needed, and then list the elements from A that belong to the set.

1. Whole numbers

(a) $\left\{ \frac{9}{0}, 4, \sqrt{25} \right\}$

(b) $\left\{ \frac{0}{9}, 4, \sqrt{25} \right\}$

(c) $\left\{ \frac{9}{0}, 4, \sqrt{25}, 2.25 \right\}$

(d) $\left\{ \frac{0}{9}, 4, \sqrt{25}, 2.25 \right\}$

1. _____

2. Integers

(a) $\left\{ -\frac{24}{3}, \frac{9}{0}, 4, \sqrt{25}, 2.25, -1 \right\}$

(b) $\left\{ -\frac{24}{3}, \frac{0}{9}, 4, -1 \right\}$

(c) $\left\{ -\frac{24}{3}, \frac{0}{9}, 4, \sqrt{25}, -1 \right\}$

(d) $\{4, -1\}$

2. _____

3. Rational numbers

(a) $\left\{ -\frac{24}{3}, \frac{9}{0}, 4, \sqrt{25}, 2.25, -1 \right\}$

(b) $\left\{ -\frac{24}{3}, \frac{0}{9}, 4, \sqrt{25}, 2.25 \right\}$

(c) $\left\{ -\frac{24}{3}, \frac{9}{0}, \frac{\sqrt{2}}{2}, \frac{0}{9}, 2.25 \right\}$

(d) $\left\{ -\frac{24}{3}, \frac{0}{9}, 4, \sqrt{25}, 2.25, -1 \right\}$

3. _____

4. Real numbers

(a) All are real numbers

(b) $\left\{-\frac{24}{3}, \frac{\sqrt{2}}{2}, 4, \sqrt{25}, 2.25, -1\right\}$

(c) $\left\{-\frac{24}{3}, \frac{\sqrt{2}}{2}, \frac{0}{9}, 4, \sqrt{25}, 2.25, -1\right\}$

(d) $\left\{-\frac{24}{3}, \frac{\sqrt{2}}{2}, \frac{9}{0}, 4, \sqrt{25}, 2.25, -1\right\}$

4. _____

For Exercises 5-7, write each inequality in interval notation.

5. $\{x \mid x \geq -8\}$

(a) $(-\infty, -8)$

(b) $(-\infty, -8]$

(c) $[-8, \infty)$

(d) $[-8, \infty)$

5. _____

6. $\{x \mid 3 < x \leq 10\}$

(a) $[3, 10)$

(b) $[3, 10]$

(c) $(3, 10)$

(d) $(3, 10]$

6. _____

7. $\{x \mid x < 7\}$

(a) $(-\infty, 7]$

(b) $(7, \infty)$

(c) $[7, \infty)$

(d) $(-\infty, 7)$

7. _____

For Exercises 8-13, perform the indicated operations.

8. $6 + (-7) - (-3) + 4$

(a) -14

(b) 0

(c) 6

(d) 20

8. _____

9. $\frac{-8}{2} - \frac{24}{-3} + 2(-5) - (-1)$

(a) -23

(b) -21

(c) -5

(d) -7

9. _____

10. $-2^4 - 2 + (-2)^3 - 5(-3)$

(a) -23

(b) 23

(c) 5

(d) -11

10. _____

11.
$$\frac{-2^3 - 4^2 + (-2 + 5)}{-[6 - 3(1)]}$$

- (a) 7 (b) -7 (c) 5 (d) -5 11. _____

12.
$$\frac{-5 + (\sqrt{36})(\sqrt{4})}{-\sqrt{9}}$$

- (a) 9 (b) $-\frac{7}{3}$ (c) $-\frac{13}{10}$ (d) $-\frac{13}{3}$ 12. _____

13.
$$\frac{-\sqrt{16}(\sqrt{25}) - (-3)(-5)}{(-\sqrt{9})6 + 3}$$

- (a) $\frac{7}{3}$ (b) $\frac{5}{3}$ (c) $\frac{1}{3}$ (d) Undefined 13. _____

Projected resident population changes from July 1, 1995, to July 1, 2000, for selected states are shown here. Use this data to answer questions 14-16.

State	2000 Population	Change From 1995
Alaska	632,000	+4.6%
California	32,423,000	+2.6%
Connecticut	3,286,000	+0.3%
District of Columbia	530,000	-4.3%
Montana	937,000	+7.7%
Rhode Island	989,000	-0.1%
Wisconsin	5,324,000	+3.9%

Source: <http://www.census.gov/population/projections/state/stpjpop.txt>

14. Which states represent the largest and smallest changes respectively from 1995 in the given list?
- (a) Montana and District of Columbia
 (b) Montana and Rhode Island
 (c) Montana and Connecticut
 (d) California and Alaska 14. _____

15. Which states' change represents the smallest absolute value?
- (a) Rhode Island (b) District of Columbia
 (c) Connecticut (d) Montana 15. _____

30 CHAPTER ONE, FORM E

16. Is the difference in change for Wisconsin and California positive or negative?

(a) Positive

(b) Negative

16. _____

For Exercises 17-19, find the square root.

17. $-\sqrt{-16}$

(a) 4

(b) -8

(c) -4

(d) Not a real number

17. _____

18. $-\sqrt{144}$

(a) 12

(b) -72

(c) -12

(d) Not a real number

18. _____

19. $\sqrt{256}$

(a) 16

(b) -16

(c) 128

(d) Not a real number

19. _____

20. If a^n represents a negative number, the following conditions must exist:

(a) a is a real number; n is negative.

(b) a is positive; n is an odd natural number.

(c) a is negative; n is an odd natural number.

(d) a is an odd natural number; n is negative.

20. _____

For Exercises 21-22, evaluate the expression if $k = -3$, $m = -4$, and $r = 36$.

21. $2m - \sqrt{r} + 3km$

(a) -34

(b) 22

(c) -50

(d) 38

21. _____

22. $\frac{r+4k}{3(k-m)}$

(a) 8

(b) 16

(c) $\frac{8}{7}$

(d) Undefined

22. _____

23. Use the properties of real numbers to simplify the following:

$$-3y - 4(-2y - 3) + 2$$

(a) $5y - 10$

(b) $-11y - 10$

(c) $-11y + 14$

(d) $5y + 14$

23. _____

For Exercises 24-30, identify which property is illustrated by the statement.

24. $7(z-8) = 7z - 56$
- | | | |
|--------------------------|---------------------------|-----------|
| (a) Commutative Property | (b) Associative Property | 24. _____ |
| (c) Inverse Property | (d) Distributive Property | |
25. $-6(m+8) = -6(8+m)$
- | | | |
|--------------------------|---------------------------|-----------|
| (a) Associative Property | (b) Distributive Property | 25. _____ |
| (c) Commutative Property | (d) Inverse Property | |
26. $-9\left(-\frac{1}{9}\right)(-4) = 1(-4)$
- | | | |
|--------------------------|--------------------------|-----------|
| (a) Identity Property | (b) Inverse Property | 26. _____ |
| (c) Commutative Property | (d) Associative Property | |
27. $5(b \cdot 9) = (5b)9$
- | | | |
|--------------------------|---------------------------|-----------|
| (a) Commutative Property | (b) Associative Property | 27. _____ |
| (c) Inverse Property | (d) Distributive Property | |
28. $(x-y)0 = 0$
- | | | |
|-------------------------------------|---------------------------|-----------|
| (a) Identity Property | (b) Inverse Property | 28. _____ |
| (c) Multiplication Property of Zero | (d) Distributive Property | |
29. $9x + 18z = 9(x + 2z)$
- | | | |
|--------------------------|---------------------------|-----------|
| (a) Identity Property | (b) Commutative Property | 29. _____ |
| (c) Associative Property | (d) Distributive Property | |
30. $3 + (4 + 5) = 3 + (5 + 4)$
- | | | |
|--------------------------|---------------------------|-----------|
| (a) Identity Property | (b) Commutative Property | 30. _____ |
| (c) Associative Property | (d) Distributive Property | |

CHAPTER ONE, FORM F

INTERMEDIATE ALGEBRA

NAME _____

SECTION _____

For Exercises 1-4, Let $A = \left\{ 0.9, -\sqrt{3}, -2, \frac{8}{2}, \frac{0}{6}, -\sqrt{36}, 3, \frac{5}{0} \right\}$. First simplify each element as needed, and then list the elements from A that belong to the set.

1. Whole numbers

(a) $\left\{ -2, \frac{0}{6}, \frac{8}{2}, 3 \right\}$

(b) $\left\{ -2, \frac{0}{6}, \frac{8}{2}, \frac{5}{0}, 3 \right\}$

(c) $\left\{ \frac{0}{6}, \frac{8}{2}, 3 \right\}$

(d) $\left\{ \frac{8}{2}, \frac{5}{0}, 3 \right\}$

1. _____

2. Integers

(a) $\left\{ -2, \frac{0}{6}, \frac{8}{2}, 3 \right\}$

(b) $\left\{ -2, \frac{0}{6}, \frac{8}{2}, -\sqrt{36}, 3 \right\}$

(c) $\left\{ -2, \frac{0}{6}, \frac{8}{2}, \frac{5}{0}, 3, -\sqrt{36} \right\}$

(d) $\left\{ \frac{0}{6}, \frac{8}{2}, 3 \right\}$

2. _____

3. Rational numbers

(a) $\left\{ 0.9, -2, \frac{8}{2}, \frac{5}{0}, 3 \right\}$

(b) $\left\{ 0.9, -\sqrt{3}, -2, \frac{8}{2}, \frac{5}{0}, -\sqrt{36}, 3 \right\}$

(c) $\left\{ -2, \frac{8}{2}, \frac{0}{6}, -\sqrt{36}, 3 \right\}$

(d) $\left\{ 0.9, -2, \frac{8}{2}, \frac{0}{6}, -\sqrt{36}, 3 \right\}$

3. _____

4. Real numbers

(a) All are real numbers

(b) $\left\{0.9, -\sqrt{3}, -2, \frac{8}{2}, -\sqrt{36}, 3\right\}$

(c) $\left\{0.9, -\sqrt{3}, -2, \frac{8}{2}, \frac{0}{6}, -\sqrt{36}, 3\right\}$

(d) $\left\{0.9, -\sqrt{3}, -2, \frac{8}{2}, \frac{5}{0}, -\sqrt{36}, 3\right\}$

4. _____

For Exercises 5-7, write each inequality in interval notation.

5. $\{x \mid x < 6\}$

(a) $(-\infty, 6]$

(b) $[6, \infty)$

(c) $(6, \infty)$

(d) $(-\infty, 6)$

5. _____

6. $\{x \mid x \geq -2\}$

(a) $(-\infty, -2)$ (b) $(-2, \infty)$ (c) $(-\infty, -2]$ (d) $[-2, \infty)$

6. _____

7. $\{x \mid 2 < x \leq 6\}$

(a) $(2, 6]$ (b) $(2, 6)$ (c) $[2, 6]$ (d) $[2, 6)$

7. _____

For Exercises 8-13, perform the indicated operations.

8. $-6 - (-4) + 9 + (-5)$

(a) -14

(b) -6

(c) 2

(d) 8

8. _____

9. $4 + \frac{6}{-2} + (-4) - 7(-3)$

(a) -24

(b) 42

(c) 0

(d) 18

9. _____

10. $5^2 - 2^3 + (-3)^3 - 7(-3)$

(a) -4

(b) 11

(c) -31

(d) 65

10. _____

11.
$$\frac{-2^2 - (-2)^3 + 6}{3 - 3(2) + 8}$$
- (a) $\frac{5}{4}$ (b) $\frac{10}{11}$ (c) 2 (d) None of these 11. _____
12.
$$\frac{-2 + \sqrt{16} - 3(2 - \sqrt{4})}{\sqrt{9} - 5 - 2(-2)}$$
- (a) $-\frac{1}{3}$ (b) $-\frac{1}{2}$ (c) 1 (d) 0 12. _____
13.
$$\frac{-3[2 - (-2 + 1) + 4]}{2^3(-3)}$$
- (a) $\frac{7}{8}$ (b) $\frac{7}{32}$ (c) $\frac{7}{4}$ (d) $-\frac{7}{4}$ 13. _____

Projected resident population changes from July 1, 1995, to July 1, 2000, for selected states are shown here. Use this data to answer questions 14-16.

State	2000 Population	Change From 1995
District of Columbia	530,000	-4.3%
Indiana	6,060,000	+4.4%
New York	18,174,000	+0.2%
Rhode Island	989,000	-0.1%
South Dakota	770,000	+5.6%
Texas	20,178,000	+7.7%

Source: <http://www.census.gov/population/projections/state/stpjpop.txt>

14. Which states represent the largest and smallest changes respectively from 1995 in the given list?
- (a) Texas and District of Columbia
 (b) Texas and Rhode Island
 (c) Texas and New York
 (d) Texas and South Dakota 14. _____
15. Which states' change represents the smallest absolute value?
- (a) Rhode Island (b) District of Columbia
 (c) New York (d) Indiana 15. _____

16. Is the difference in change for Rhode Island and the District of Columbia positive or negative?
- (a) Positive (b) Negative 16. _____

For Exercises 17-19, find the square root.

17. $-\sqrt{400}$
- (a) -20 (b) 20 (c) -200 (d) Not a real number 17. _____

18. $-\sqrt{-169}$
- (a) -13 (b) 13 (c) 17 (d) Not a real number 18. _____

19. $\sqrt{0.09}$
- (a) 3 (b) 0.03 (c) 0.3 (d) Not a real number 19. _____

20. If \sqrt{a} represents a real number, the following conditions must exist:
- (a) a is an integer.
 (b) a is nonnegative.
 (c) a is a negative even number.
 (d) a is a negative odd number. 20. _____

For Exercises 21-22, evaluate the expression if $k = -3$, $m = -4$, and $r = 36$.

21. $\sqrt{r} + 3m - 2k$
- (a) 0 (b) -12 (c) 6 (d) 24 21. _____

22. $\frac{r-2k}{7m-10k}$
- (a) 15 (b) $\frac{21}{29}$ (c) 21 (d) Undefined 22. _____

36 CHAPTER ONE, FORM F

23. Use the properties of real numbers to simplify the following:

$$4y - 5(y - 6) - 10$$

- (a)
- $-9y - 40$
- (b)
- $-9y + 20$
- (c)
- $-y + 20$
- (d)
- $-y - 40$
23. _____

For Exercises 24-30, identify which property is illustrated by the statement.

24. $0\left(\frac{2}{5t} - 3\right) = 0$

- (a) Identity Property (b) Inverse Property
-
- (c) Multiplication Property of Zero (d) Distributive Property 24. _____

25. $5y + 9 + 2y = 5y + 2y + 9$

- (a) Associative Property (b) Distributive Property
-
- (c) Commutative Property (d) Inverse Property 25. _____

26. $1(x - 4) = x - 4$

- (a) Identity Property (b) Inverse Property
-
- (c) Commutative Property (d) Associative Property 26. _____

27. $2t + 16 = 2(t + 8)$

- (a) Commutative Property (b) Associative Property
-
- (c) Inverse Property (d) Distributive Property 27. _____

28. $0 + \frac{2}{3} = -\frac{2}{3}$

- (a) Identity Property (b) Inverse Property
-
- (c) Multiplication Property of Zero (d) Distributive Property 28. _____

29. $3(x + 5) = 3(5 + x)$

- (a) Identity Property (b) Commutative Property
-
- (c) Associative Property (d) Distributive Property 29. _____

30. $4a + (a - 6) = (4a + a) - 6$

- (a) Identity Property (b) Commutative Property
-
- (c) Associative Property (d) Distributive Property 30. _____