

Pre-Algebra

Summer Packet

Please return this packet to Mrs. Dunphy
before the first day of school.

Student Name Answer Key

The purpose of this packet is to provide practice problems for the skills you should know well to succeed in the Accelerated track of Pre-Algebra in 6th grade.

If you come across an unfamiliar topic I recommend searching the topic name on Khan Academy. You can find the topic names at the top of each worksheet.

Please show all work in this packet and circle or box all answers. You may attach any extra scratch work to the back of this packet. All problems should be done without a calculator.

After 5/24/19 you will be able to check your answers on my blog at <https://adunphymath.weebly.com/summer-packet.html>

Feel free to email me with questions at adunphy@scottsdaleprep.org

Note: I frequently check my email in June but rarely check my email in July

Order of Operations

Evaluate each expression.

1) $3(6 + 7)$

39

2) $5 \times 3 \times 2$

30

3) $72 \div 9 + 7$

15

4) $2 + 7 \times 5$

37

5) $9 + 8 - 7$

10

6) $9 - 32 \div 4$

1

7) $5(10 - 1)$

45

8) $48 \div (4 + 4)$

6

9) $20 \div (4 - (10 - 8))$

10

10) $40 \div 4 - (5 - 3)$

8

11) $9 + 9 + 6 - 5$

19

12) $(5 + 16) \div 7 - 2$

1

13) $7 + 10 \times 5 + 10$

67

14) $(6 + 25 - 7) \div 6$

4

$$15) (6 - 4) \times 49 \div 7$$

14

$$16) (7 \times 5) \div 5$$

7

$$17) \frac{43 - 1}{4 + 2} + 10$$

17

$$18) (8 + 5) \times \frac{35}{5} + 6$$

97

$$19) \frac{27}{2 + 3 + 4} + 3$$

6

$$20) \frac{45}{8(5 - 4) - 3}$$

9

$$21) 8 \times \frac{15}{5} - (5 + 9)$$

10

$$22) 2 \times 7 - \frac{10}{9 - 4}$$

12

$$23) (10 + 2 - 2) \times 6 - 1$$

59

$$24) \frac{49}{7} \times \frac{60}{2 \times 5}$$

42

$$25) (2 + 6 \times 2 + 2 - 4) \times 2$$

24

$$26) \frac{8}{5 - 1} \times (3 + 6) \times 3$$

54

Name _____

Adding and Subtracting Decimals

Find each sum.

1) $10.392 + 27.794 + 36.2$

74.386

2) $23.1 + 44.06 + 19.8$

86.96

3) $12 + 33.7 + 4.22$

49.92

4) $26.2 + 28.05 + 22.6$

76.85

5) $43.6 + 11.44 + 36.8$

91.84

6) $1.9 + 49.58 + 26.1$

77.58

Find each difference.

7) $33.6 - 11.15$

22.45

8) $29.75 - 29.5$

0.25

9) $25.1 - 24.159$

0.941

10) $28.06 - 4.7$

23.36

11) $29.13 - 0.3$

28.83

12) $16 - 4.39$

11.61

- 13) Sydney was given 4 one thousand dollar bills, 2 one hundred dollar bills, 9 one dollar bills and 8 dimes, 3 pennies. Jacob was given 3 one thousand dollar bills, 9 one hundred dollar bills, 8 ten dollar bills, 7 one dollar bills, and 7 dimes, 6 pennies.

Who had more money?

Sydney \rightarrow \$4,209.83

How much more?

\$222.07

- 14) Sammy ran the race .059 seconds faster than Olivia. Olivia finished the race in 14.289 seconds. Johnathan finished .087 slower than Olivia. Isaac finished .345 faster than Sammy.

Hint: faster \rightarrow subtraction slower \rightarrow addition

What did place did all competitors finish and their times

1st- Isaac 13.885
2nd- Sammy 14.23
3rd- Olivia 14.289
4th- Jonathan 14.376

- 15) Hamburger \$2.45 add Cheese \$.42
5 Chicken Nuggets \$1.13 add Sauce \$.20

At lunch Emily ordered 10 chicken nuggets, one ranch, and one bbq sauce. Stephen ordered a cheeseburger.

Who paid more for lunch?

Emily \rightarrow \$2.66
Stephen \rightarrow \$2.87

Stephen paid more for lunch.

Multiplying Decimals

Find each product.

1) -5.5×-4.87

26.785

2) 1.7×-2.1

-3.57

3) 0.2×-1.6

-0.32

4) 1.7×-3.1

-5.27

5) -4.6×-7.2

33.12

6) -5.928×-11.6

68.7648

7) -1.5×-7.1

10.65

8) 7.8×5.1

39.78

9) $-7.5 \times 9 \times -8.3$

560.25

10) $-4.04 \times -9 \times 3$

109.08

11) $3.2 \times 8.7 \times -1.1$

-30.624

12) $8.1 \times 8.6 \times -5.2$

-362.232

Dividing Signed Decimal Numbers

Find each quotient.

1) $-6.8 \div -7.4$

$$0.\overline{918}$$

3) $3.6 \div -9.8$

$$-0.367$$

5) $1.1 \div 8.8$

$$0.125$$

7) $2.8 \div 1.25$

$$2.24$$

9) $2.6 \div -3.3$

$$-0.\overline{78}$$

11) $\frac{-5.6}{-1.8}$

$$3.\overline{1}$$

13) $\frac{9.1}{-10}$

$$-0.91$$

15) $\frac{-0.4}{-2.443}$

$$0.164$$

17) $\frac{8.2}{-4.1}$

$$-2$$

19) $\frac{9.3}{2.99}$

$$3.110$$

2) $-8.4 \div -9.6$

$$0.875$$

4) $-0.84 \div -2.8$

$$0.3$$

6) $9.5 \div -6.1$

$$-1.557$$

8) $1.6 \div -0.9$

$$-1.\overline{7}$$

10) $8.8 \div -4.1$

$$-2.\overline{14634}$$

12) $\frac{5.8}{-3.7}$

$$-1.\overline{567}$$

14) $\frac{-8.4}{-4.7}$

$$1.787$$

16) $\frac{2.1}{3}$

$$0.7$$

18) $\frac{1.3}{-8.5}$

$$-0.153$$

20) $\frac{9.3}{-0.2}$

$$-46.5$$

Integer Addition, Subtraction, Multiplication and Division

Find each sum.

$1) (-3) + (-5) = -8$

$2) (-6) + (-1) = -7$

$3) 1 + (-1) = 0$

$4) (-5) + (-3) = -8$

Find each difference.

$5) (-6) - 3 = -9$

$6) 7 - (-1) = 8$

$7) (-3) - 8 = -11$

$8) 3 - 8 = -5$

Evaluate each expression.

$9) 7 - (-5) = 12$

$10) (-2) - (-2) = 0$

$11) (-4) - (-5) = 1$

$12) (-7) - 7 = -14$

$13) (-1) - (-1) = 0$

$14) 3 - (-5) = 8$

$15) 6 + (-1) = 5$

$16) (-8) + 4 = -4$

$17) (-5) - (-1) = -4$

$18) (-8) - (-6) = -2$

Find each product.

$19) (-5)(10) = -50$

$20) (-3)(7) = -21$

$21) (7)(-7) = -49$

$22) (5)(-9) = -45$

$23) (7)(-1) = -7$

$24) (-9)(5) = -45$

$25) (-6)(-6) = 36$

$26) (-3)(-10) = 30$

27) $(8)(-2)$ -16

28) $(4)(-4)$ -16

29) $(-10)(-3)$ 30

30) $(7)(-8)$ -56

31) $(-8)(-2)$ 16

32) $(-4)(-6)$ 24

33) $(-9)(3)$ -27

34) $(2)(-2)$ -4

35) $(6)(-3)(-5)$ 90

36) $(9)(-7)(9)$ -567

37) $(-9)(2)(-6)$ 108

38) $(-6)(-1)(8)$ 48

39) $(-2)(-5)(-7)(8)$ -560

40) $(5)(8)(-2)(-9)$ 720

41) $(4)(-7)(8)(-5)$ 1120

42) $(7)(-2)(7)(5)$ -490

Find each quotient.

43) $\frac{-70}{-10}$ 7

44) $\frac{-21}{-7}$ 3

45) $\frac{36}{-4}$ -9

46) $\frac{4}{-1}$ -4

47) $\frac{18}{3}$ 6

48) $\frac{12}{6}$ 2

49) $-72 \div -9$ 8

50) $-18 \div 9$ -2

51) $8 \div -2$ -4

52) $-20 \div -5$ 4

53) $-14 \div 7$ -2

54) $-72 \div 8$ -9

Multiplying/Dividing Fractions and Mixed Numbers

Find each product.

$$1) -\frac{5}{4} \cdot \frac{1}{3} = -\frac{5}{12}$$

$$2) \frac{8}{7} \cdot \frac{7}{10} = \frac{4}{5}$$

$$3) \frac{4}{9} \cdot \frac{7}{4} = \frac{7}{9}$$

$$4) -\frac{2}{3} \cdot \frac{5}{4} = -\frac{5}{6}$$

$$5) -2 \cdot \frac{3}{7} = -\frac{6}{7}$$

$$6) -2\frac{2}{3} \cdot 4\frac{1}{10} = -10\frac{14}{15}$$

$$7) -2\frac{1}{5} \cdot -1\frac{3}{4} = 3\frac{17}{20}$$

$$8) -1\frac{1}{4} \cdot 9 = -11\frac{1}{4}$$

$$9) -1\frac{5}{7} \cdot -2\frac{1}{2} = 4\frac{2}{7}$$

$$10) -2\frac{3}{8} \cdot 2\frac{1}{2} = -5\frac{15}{16}$$

Find each quotient.

$$11) \frac{-1}{5} \div \frac{7}{4} = -\frac{4}{35}$$

$$12) \frac{-1}{2} \div \frac{5}{4} = -\frac{2}{5}$$

$$13) \frac{-3}{2} \div \frac{-10}{7} = \frac{1}{20}$$

$$14) \frac{1}{2} \div \frac{8}{7} = \frac{7}{16}$$

$$15) \frac{-9}{5} \div 2 = -\frac{9}{10}$$

$$16) -3\frac{5}{9} \div 3 = -1\frac{5}{27}$$

$$17) -2 \div -3\frac{4}{5} = \frac{10}{19}$$

$$18) \frac{1}{9} \div -1\frac{1}{3} = -\frac{1}{12}$$

$$19) 1\frac{6}{7} \div 5\frac{3}{4} = \frac{52}{161}$$

$$20) -3\frac{7}{10} \div 2\frac{1}{4} = -1\frac{29}{45}$$

Add/Subtracting Fractions and Mixed Numbers

Evaluate each expression.

$$1) \frac{5}{4} - \frac{3}{4} = \frac{1}{2}$$

$$2) \frac{3}{2} - \frac{1}{2} = 1$$

$$3) \frac{2}{5} + \frac{4}{5} = \frac{6}{5}$$

$$4) \frac{1}{3} - \frac{1}{3} = 0$$

$$5) 6 - \frac{1}{6} = \frac{35}{6}$$

$$6) \frac{1}{2} - \frac{1}{2} = 0$$

$$7) \frac{1}{5} + \frac{1}{5} = \frac{2}{5}$$

$$8) \frac{7}{6} - \frac{5}{6} = \frac{1}{3}$$

$$9) \left(-\frac{4}{5}\right) - \frac{7}{8} = -\frac{67}{40}$$

$$10) \frac{1}{3} - \left(-\frac{5}{3}\right) = 2$$

$$11) \left(-\frac{1}{3}\right) + \frac{3}{8} = \frac{1}{24}$$

$$12) \left(-\frac{10}{7}\right) + \frac{1}{6} = -\frac{53}{42}$$

$$13) \frac{9}{5} + \left(-\frac{4}{3}\right) = \frac{7}{15}$$

$$14) 2 - \frac{13}{8} = \frac{3}{8}$$

$$15) \frac{9}{5} - \frac{5}{8} \quad \frac{47}{40}$$

$$16) \left(-\frac{4}{3}\right) - \left(-\frac{3}{2}\right) \quad \frac{1}{6}$$

$$17) (-1) + \left(-2\frac{2}{5}\right) \quad -3\frac{2}{5}$$

$$18) \left(-3\frac{3}{5}\right) - 4\frac{2}{5} \quad -8$$

$$19) 3\frac{6}{7} + \left(-1\frac{1}{7}\right) \quad 2\frac{5}{7}$$

$$20) 1\frac{2}{7} + \left(-3\frac{4}{7}\right) \quad -2\frac{2}{7}$$

$$21) 2\frac{1}{3} + \left(-1\frac{2}{3}\right) \quad \frac{2}{3}$$

$$22) \left(-1\frac{3}{4}\right) + \left(-3\frac{3}{4}\right) \quad -5\frac{1}{2}$$

$$23) \left(-1\frac{7}{8}\right) + \left(-3\frac{1}{2}\right) \quad -5\frac{3}{8}$$

$$24) \left(-2\frac{7}{8}\right) + \left(-1\frac{1}{2}\right) \quad -4\frac{3}{8}$$

$$25) \left(-2\frac{5}{6}\right) - \left(-1\frac{1}{4}\right) \quad -1\frac{7}{12}$$

$$26) \left(-3\frac{5}{8}\right) - 4\frac{2}{5} \quad -8\frac{1}{40}$$

$$27) 1\frac{2}{5} - \left(-3\frac{3}{4}\right) \quad 5\frac{3}{20}$$

$$28) 2\frac{4}{5} - \frac{5}{8} \quad 2\frac{7}{40}$$

Fractions, Decimals, and Percents

Write each as a decimal. Round to the thousandths place.

1) 90%

0.9

2) 30%

0.3

3) 115.9%

1.159

4) 9%

0.09

5) 7%

0.07

6) 65%

0.65

7) 0.3%

0.003

8) 445%

4.45

Write each as a percent. Round to the nearest tenth of a percent.

9) 0.452

45.2%

10) 0.006

0.6%

11) 0.002

0.2%

12) 0.05

5%

13) 4.78

478%

14) 0.1

10%

15) 3.63

363%

16) 0.03

3%

Write each as a fraction.

17) 25% $\frac{1}{4}$

18) 70% $\frac{7}{10}$

19) 93% $\frac{93}{100}$

20) 58% $\frac{29}{50}$

21) 50% $\frac{1}{2}$

22) $66.\overline{6}\%$ $\frac{2}{3}$

23) 20% $\frac{1}{5}$

24) 80% $\frac{4}{5}$

25) 71% $\frac{71}{100}$

26) 30% $\frac{3}{10}$

Write each as a percent. Use repeating decimals when necessary.

27) $\frac{1}{2}$ 50%

28) $\frac{1}{8}$ 12.5%

29) $\frac{2}{3}$ $66.\overline{6}\%$

30) $\frac{1}{100}$ 1%

31) $2\frac{1}{10}$ 210%

32) $\frac{3}{8}$ 37.5%

33) $\frac{1}{10}$ 10%

34) $\frac{87}{100}$ 87%

Simplify Expressions: Combining Like Terms and the Distributive Property

Simplify each expression.

1) $-10b + b$

$$-9b$$

2) $-x - 3x$

$$-4x$$

3) $1 + 5v + v$

$$6v + 1$$

4) $-7n - 7 - 8 + 10n$

$$3n - 15$$

5) $5k + 7k$

$$12k$$

6) $a - 2 + 1 + 4a$

$$5a - 1$$

7) $8(x + 10)$

$$8x + 80$$

8) $8(1 + 6p)$

$$48p + 8$$

9) $-5(-7 + 7n)$

$$-35n + 35$$

10) $-(9m + 7)$

$$-9m - 7$$

11) $-(1 - 5x)$

$$5x - 1$$

12) $-4(7r + 7)$

$$-28r - 28$$

$$13) -2(n-9)+4$$

$$-2n+22$$

$$14) -6+9(8-2b)$$

$$-18b+66$$

$$15) 6x-3(2-3x)$$

$$15x-6$$

$$16) -8(-2r-2)-6r$$

$$10r+16$$

$$17) -3(a+1)+6$$

$$-3a+3$$

$$18) -2(-3-3n)+1$$

$$6n+7$$

$$19) 3(1+2v)-3(1+4v)$$

$$-6v$$

$$20) 4(x-10)-6(x-4)$$

$$-2x-16$$

$$21) 4(10x+6)-10(9x+9)$$

$$-50x-66$$

$$22) 10(9+8n)-6(7n+9)$$

$$38n+36$$

$$23) 7(1+10p)+8(1+6p)$$

$$118p+15$$

$$24) 10(3+8k)+9(k+3)$$

$$89k+57$$

One-Step Equations

Solve each equation.

1) $26 = 8 + v$

18

2) $3 + p = 8$

5

3) $15 + b = 23$

8

4) $-15 + n = -9$

6

5) $m + 4 = -12$

-16

6) $x - 7 = 13$

20

7) $m - 9 = -13$

-4

8) $p - 6 = -5$

1

9) $v - 15 = -27$

-12

10) $n + 16 = 9$

-7

11) $-104 = 8x$

-13

12) $14b = -56$

-4

13) $-6 = \frac{b}{18}$

-108

14) $10n = 40$

4

$$15) \frac{v}{8} = 2$$

16

$$16) 16 = \frac{k}{11}$$

176

$$17) -15x = 0$$

0

$$18) -17x = -204$$

12

$$19) 21 = -7n$$

-3

$$20) \frac{m}{4} = -13$$

-52

$$21) -126 = 14k$$

-9

$$22) -143 = -11x$$

13

$$23) -16 + x = -15$$

1

$$24) -5 = \frac{a}{18}$$

-90

$$25) -17 = x - 15$$

-2

$$26) n - 8 = -10$$

-2

$$27) \frac{v}{7} = 8$$

56

$$28) a + 11 = 20$$

9

$$29) -7 + m = 8$$

15

$$30) 18 + m = 8$$

-10

Two-Step Equations

Solve each equation.

$$1) 6 = \frac{a}{4} + 2$$

16

$$2) -6 + \frac{x}{4} = -5$$

4

$$3) 9x - 7 = -7$$

0

$$4) 0 = 4 + \frac{n}{5}$$

-20

$$5) -4 = \frac{r}{20} - 5$$

20

$$6) -1 = \frac{5+x}{6}$$

-11

$$7) \frac{v+9}{3} = 8$$

15

$$8) 2(n+5) = -2$$

-6

$$9) -9x + 1 = -80$$

9

$$10) -6 = \frac{n}{2} - 10$$

8

$$11) -2 = 2 + \frac{v}{4}$$

-16

$$12) 144 = -12(x+5)$$

-17

$$13) -15 = -4m + 5$$

5

$$14) 10 - 6v = -104$$

19

$$15) 8n + 7 = 31$$

3

$$16) -9x - 13 = -103$$

10

$$17) \frac{n+5}{-16} = -1$$

11

$$18) -10 = -10 + 7m$$

0

$$19) -10 = 10(k-9)$$

8

$$20) \frac{m}{9} - 1 = -2$$

-9

$$21) 9 + 9n = 9$$

0

$$22) 7(9+k) = 84$$

3

$$23) 8 + \frac{b}{-4} = 5$$

12

$$24) -243 = -9(10+x)$$

17

Multi-Step Equations

Solve each equation.

1) $2(8a + 1) = 114$

7

2) $-8(3 - 7x) = 88$

2

3) $6(k + 6) = 84$

8

4) $-128 = -8(6 + 5x)$

2

5) $8(2 - 6p) + 3(p + 8) = -50$

2

6) $-24 = 4(4x + 4) - 4(8 + 3x)$

-2

7) $\frac{1}{2}n + \frac{1}{2}n = -\frac{11}{6}$

$-\frac{11}{6}$

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

$\frac{5}{3}$

9) $5(1 + 4x) - 5 = 80$

4

10) $-\frac{3}{2}v + \frac{19}{8}v = \frac{7}{8}$

1

11) $0 = 2n + \frac{8}{5}n$

0

12) $\frac{1}{6}k + \frac{1}{3}k = \frac{3}{8}$

$\frac{3}{4}$

Multistep Solving Equations

Solve each equation.

1) $-5(6 - 5p) = 95$

5

2) $-160 = 5(5n - 7)$

-5

3) $-106 = -2(6m + 5)$

8

4) $8 + 8(1 + 6x) = 352$

7

5) $-(5r - 6) - 5(-6r + 5) = -44$

-1

6) $-4(-n - 3) - 2(4 - 5n) = 74$

5

7) $31 = 3(1 + 2m) + 5(m - 1)$

3

8) $-78 = -5(5 + 4x) - 3(7 - 4x)$

4

9) $6(2x + 8) - 2 = 2(x - 2)$

-5

10) $-5(6x + 2) = -5(3x + 5)$

1

11) $5(1 + b) = 8b - 2(b - 2)$

1

12) $2(4 + 2v) = -6(v - 8)$

4

One-Step Inequalities

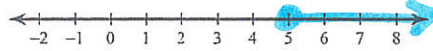
Solve each inequality and graph its solution.

1) $-12 > x - 7$



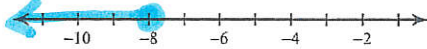
$$x < -5$$

2) $-1 + r \geq 4$



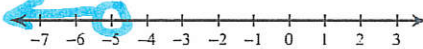
$$r \geq 5$$

3) $n - 6 \leq -14$



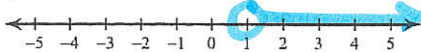
$$n \leq -8$$

4) $b - 7 < -12$



$$b < -5$$

5) $a - 17 > -16$



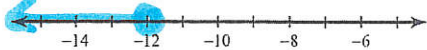
$$a > 1$$

6) $15 + x \leq 0$



$$x \leq -15$$

7) $3 + v \leq -9$



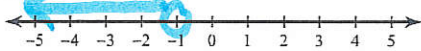
$$v \leq -12$$

8) $8 \geq n - 6$



$$n \leq 14$$

9) $-3x > 3$



$$x < -1$$

10) $\frac{n}{3} > 3$



$$n > 9$$

11) $\frac{k}{4} < -4$



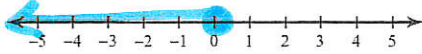
$$k < -16$$

12) $-9x \geq -90$



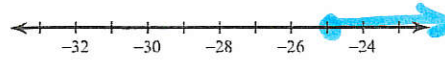
$$x \leq 10$$

$$13) 0 \geq 7n$$



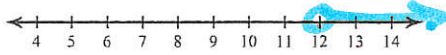
$$n \leq 0$$

$$14) \frac{m}{5} \geq -5$$



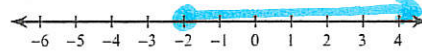
$$m \geq -25$$

$$15) -13x < -156$$



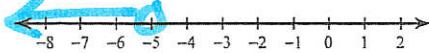
$$x > 12$$

$$16) 32 \geq -16p$$



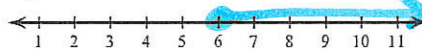
$$p \geq -2$$

$$17) -8 > v - 3$$



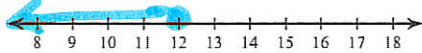
$$v < -5$$

$$18) 11 \leq 5 + x$$



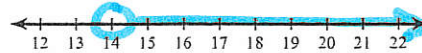
$$x \geq 6$$

$$19) 25 \geq n + 13$$



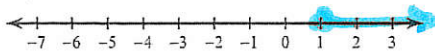
$$n \leq 12$$

$$20) -168 > -12a$$



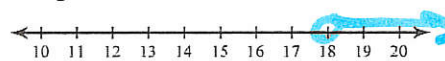
$$a > 14$$

$$21) -3 \leq x - 4$$



$$x \geq 1$$

$$22) \frac{r}{3} > 6$$



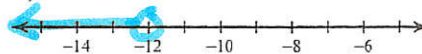
$$r > 18$$

$$23) 12n \geq 84$$



$$n \geq 7$$

$$24) -22 > -10 + b$$

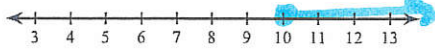


$$b < -12$$

Two-Step Inequalities

Solve each inequality and graph its solution.

1) $2x + 4 \geq 24$



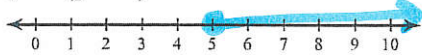
$$x \geq 10$$

2) $\frac{m}{3} - 3 \leq -6$



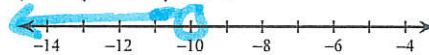
$$m \leq -9$$

3) $-3(p + 1) \leq -18$



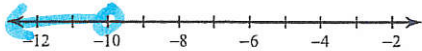
$$p \geq 5$$

4) $-4(-4 + x) > 56$



$$x < -10$$

5) $-b - 2 > 8$



$$b < -10$$

6) $-4(3 + n) > -32$



$$n < 5$$

7) $4 + \frac{n}{3} < 6$



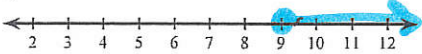
$$n < 6$$

8) $-3(r - 4) \geq 0$



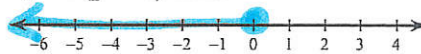
$$r \leq 4$$

9) $-7x + 7 \leq -56$



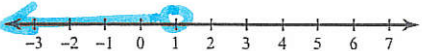
$$x \geq 9$$

10) $-3(p - 7) \geq 21$



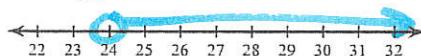
$$p \leq 0$$

11) $-11x - 4 > -15$



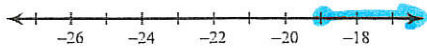
$$x < 1$$

12) $\frac{-9 + a}{15} > 1$



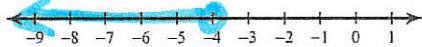
$$a > 24$$

$$13) -1 \leq \frac{v-2}{21}$$



$$v \geq -19$$

$$15) \frac{-11+n}{15} < -1$$



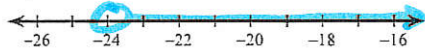
$$n < -4$$

$$17) 4 < 1 + \frac{n}{7}$$



$$n > 21$$

$$19) 7n - 1 > -169$$



$$n > -24$$

$$21) 84 \geq -7(v-9)$$



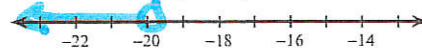
$$v \geq -3$$

$$23) \frac{x}{-6} - 8 \leq -12$$



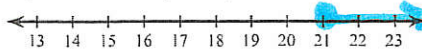
$$x \geq 24$$

$$14) -132 > 12(n+9)$$



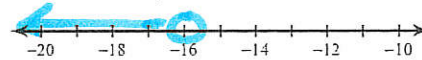
$$n < -20$$

$$16) -90 \geq -5(k-3)$$



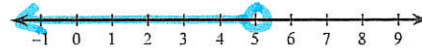
$$k \geq 21$$

$$18) -1 > \frac{12+x}{4}$$



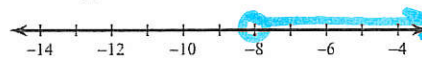
$$x < -16$$

$$20) -4b - 5 > -25$$



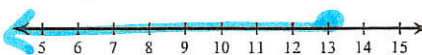
$$b < 5$$

$$22) \frac{-8+r}{2} > -8$$



$$r > -8$$

$$24) \frac{m-3}{2} \leq 5$$



$$m \leq 13$$

Adding and Subtracting Polynomials

Simplify each expression.

1) $(5p^2 - 3) + (2p^2 - 3p^3)$

$$-3p^3 + 7p^2 - 3$$

3) $(4 + 2n^3) + (5n^3 + 2)$

$$7n^3 + 6$$

5) $(3a^2 + 1) - (4 + 2a^2)$

$$a^2 - 3$$

7) $(5a + 4) - (5a + 3)$

$$1$$

9) $(-4k^4 + 14 + 3k^2) + (-3k^4 - 14k^2 - 8)$

$$-7k^4 - 11k^2 + 6$$

11) $(12a^5 - 6a - 10a^3) - (10a - 2a^5 - 14a^4)$

$$14a^5 + 14a^4 - 10a^3 - 16a$$

13) $(-x^4 + 13x^5 + 6x^3) + (6x^3 + 5x^5 + 7x^4)$

$$18x^5 + 6x^4 + 12x^3$$

15) $(13n^2 + 11n - 2n^4) + (-13n^2 - 3n - 6n^4)$

$$-8n^4 + 8n$$

2) $(a^3 - 2a^2) - (3a^2 - 4a^3)$

$$5a^3 - 5a^2$$

4) $(4n - 3n^3) - (3n^3 + 4n)$

$$-6n^3$$

6) $(4r^3 + 3r^4) - (r^4 - 5r^3)$

$$2r^4 + 9r^3$$

8) $(3x^4 - 3x) - (3x - 3x^4)$

$$6x^4 - 6x$$

10) $(3 - 6n^5 - 8n^4) - (-6n^4 - 3n - 8n^5)$

$$2n^5 - 2n^4 + 3n + 3$$

12) $(8n - 3n^4 + 10n^2) - (3n^2 + 11n^4 - 7)$

$$-14n^4 + 7n^2 + 8n + 7$$

14) $(9r^3 + 5r^2 + 11r) + (-2r^3 + 9r - 8r^2)$

$$7r^3 - 3r^2 + 20r$$

16) $(-7x^5 + 14 - 2x) + (10x^4 + 7x + 5x^5)$

$$-2x^5 + 10x^4 + 5x + 14$$

$$17) (7 - 13x^3 - 11x) - (2x^3 + 8 - 4x^5)$$

$$4x^5 - 15x^3 - 11x - 1$$

$$19) (3v^5 + 8v^3 - 10v^2) - (-12v^5 + 4v^3 + 14v^2)$$

$$15v^5 + 4v^3 - 24v^2$$

$$21) (k^4 - 3 - 3k^3) + (-5k^4 + 6k^3 - 8k^5)$$

$$-8k^5 - 4k^4 + 3k^3 - 3$$

$$23) (-7n^2 + 8n - 4) - (-11n + 2 - 14n^2)$$

$$7n^2 + 19n - 6$$

$$25) (8k + k^2 - 6) - (-10k + 7 - 2k^2)$$

$$3k^2 + 18k - 13$$

$$26) (-9v^2 - 8u) + (-2uv - 2u^2 + v^2) + (-v^2 + 4uv)$$

$$-9v^2 + 2uv - 2u^2 - 8u$$

$$27) (4x^2 + 7x^3y^2) - (-6x^2 - 7x^3y^2 - 4x) - (10x + 9x^2)$$

$$14x^3y^2 + x^2 - 6x$$

$$28) (-5u^3v^4 + 9u) + (-5u^3v^4 - 8u + 8u^2v^2) + (-8u^4v^2 + 8u^3v^4)$$

$$-2u^3v^4 - 8u^4v^2 + 8u^2v^2 + 9u$$

$$29) (-9xy^3 - 9x^4y^3) + (3xy^3 + 7y^4 - 8x^4y^4) + (3x^4y^3 + 2xy^3)$$

$$-8x^4y^4 - 6x^4y^3 + 7y^4 - 4xy^3$$

$$30) (y^3 - 7x^4y^4) + (-10x^4y^3 + 6y^3 + 4x^4y^4) - (x^4y^3 + 6x^4y^4)$$

$$-9x^4y^4 - 11x^4y^3 + 7y^3$$

$$18) (13a^2 - 6a^5 - 2a) - (-10a^2 - 11a^5 + 9a)$$

$$5a^5 + 23a^2 - 11a$$

$$20) (8b^3 - 6 + 3b^4) - (b^4 - 7b^3 - 3)$$

$$2b^4 + 15b^3 - 3$$

$$22) (-10k^2 + 7k + 6k^4) + (-14 - 4k^4 - 14k)$$

$$2k^4 - 10k^2 - 7k - 14$$

$$24) (14p^4 + 11p^2 - 9p^5) - (-14 + 5p^5 - 11p^2)$$

$$-14p^5 + 14p^4 + 22p^2 + 14$$