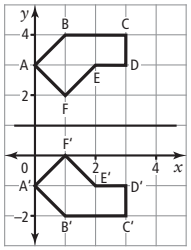
Warm Up Answers

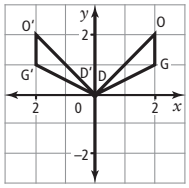
1.1 Warm Up, page 5

1. a)



A′ (0, –1); B′ (1, –2); C′ (3, –2); D′ (3, –1); E′ (2, –1); F′ (1, 0)

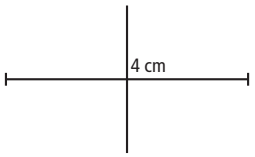
b)



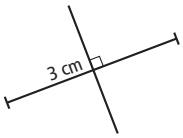
D′ (0, 0); O′ (–2, 2); G′ (–2, 1)

2. a, b, d

3. a)



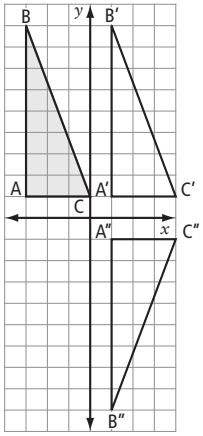
b)



4. Answers will vary.

1.2 Warm Up, page 15

1. a) and **c)**



b) A′ (1, 1); B′ (1, 9); C′ (4, 1)

2. a)

Figure	Lines of Symmetry	Number of Lines of Symmetry
Equilateral triangle		3
Square		4
Regular pentagon		5
Regular hexagon		6

b) The number of sides is equal to the number of lines of symmetry.

3. a) 5 **b)** 0

1.3 Warm Up, page 25

1. a) 248 m^2 **b)** 471 cm^2

2. 470 cm^2

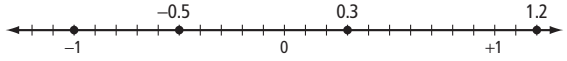
2.1 Warm Up, page 55

1. a) 1.2 **b)** –1

2. a) 0.5 **b)** 0.6

3. a) $\frac{3}{10}$ **b)** $\frac{85}{100}$ or $\frac{17}{20}$

4. a)



b) –1, –0.5, 0.3, 1.2

5. Answers may vary. Example: **a)** $\frac{4}{6}$ **b)** $\frac{4}{6}$ or $\frac{2}{3}$

6. a) +5 **b)** –3.4 **c)** $-\frac{3}{4}$ **d)** $\frac{2}{5}$

2.2 Warm Up, page 64

1. a) 2 **b)** –12 **c)** –6 **d)** 12 **e)** –6 **f)** 5 **g)** –2 **h)** 5

2. Estimates will vary. **a)** Estimate: 5; Calculate: 5.24 **b)** Estimate: 0.4; Calculate: 0.43 **c)** Estimate: 18; Calculate: 20.15 **d)** Estimate: 3; Calculate: 3

3. a) 10 **b)** 9

2.3 Warm Up, page 74

1. a) $\frac{4}{5}$ **b)** $\frac{2}{9}$

2. $\frac{14}{3}$

3. a) $\frac{9}{10}$ **b)** $\frac{1}{2}$

4. a) $5\frac{1}{10}$ **b)** $\frac{11}{14}$

2.4 Warm Up, page 88

1. a) 4 **b)** 100 **c)** 1.44 **d)** 0.25

2. a) 3 **b)** 4 **c)** 5 **d)** 10

3. a) 1.1 **b)** 0.3 **c)** 1.2 **d)** 1.5

4. a) 3.6 **b)** 0.79 **c)** 290 **d)** 0.729

3.1 Warm Up, page 119

1. a) 8 **b)** 25 **c)** 1 **d)** 27

2. a) +9 **b)** –16 **c)** +64 **d)** –49 **e)** –27 **f)** +16

3. a) 25 m^2 **b)** 144 cm^2

4. a) 64 m^3 **b)** 8 cm^3

3.2 Warm Up, page 128

1. a) 6^4 **b)** 3^7 **c)** $(-4)^5$ **d)** $(-9)^2$

2. a) 81 **b)** –8 **c)** –1 **d)** –4 **e)** –16 **f)** (–25)

3.

Repeated Multiplication	Exponential Form	Value
a) $5 \times 5 \times 5 \times 5$	5^4	625
b) $(-3) \times (-3) \times (-3)$	$(-3)^3$	-27
c) 5×5 *or* $(-5) \times (-5)$	5^2 *or* $(-5)^2$	25
d) $(-7) \times (-7)$	$(-7)^2$	49
e) $(-10) \times (-10) \times (-10) \times (-10)$	$(-10)^4$	10 000

4. $(-3)^3$, -2^4, 1^{10}, $(-4)^2$

3.3 Warm Up, page 141

1.

Power	Repeated Multiplication	Value
a) 3^3	$3 \times 3 \times 3$	27
b) $(-10)^5$	$(-10) \times (-10) \times (-10) \times (-10) \times (-10)$	$-100\,000$
c) -4^2	$-(4 \times 4)$	-16
d) $-(-9^2)$	$-[(-9) \times (-9)]$	-81

2. a) $2^6 = 64$ **b)** $(-4)^3 = -64$ **c)** $5^0 = 1$ **d)** $(-9)^2 = 81$

3. a) 14 **b)** -35 **c)** 9 **d)** -13

3.4 Warm Up, page 149

1. a) 120 cm^2 **b)** 1017.36 cm^2

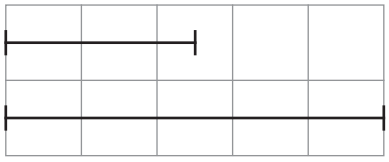
2. a) 384 cm^2 **b)** 1004.8 cm^2

3. a) 11.7 cm **b)** 11.2 cm

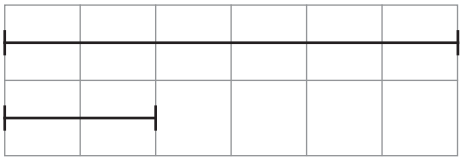
4.1 Warm Up, page 177

1. a) length: 4 cm; width: 3 cm **b)** length of base: 5 cm; height: 1 cm

2. a)



b)



3. a) 12 **b)** 1 **c)** 1 **d)** 7.2

4. a) 10.2 **b)** 24 **c)** 24 **d)** 18

4.2 Warm Up, page 188

1. a) 30 **b)** 800 **c)** 3 **d)** 6

2. a) $\frac{1}{15}$ **b)** $\frac{1}{1000}$

3. a) 24.9 **b)** 159.2

4. a) 1124.83 **b)** 58.25

5. a) 3000 **b)** 3 **c)** 14 000 **d)** 40

4.3 Warm Up, page 196

1. a) 50° **b)** 20°

2. 63°

3. a) 8 **b)** 312

4. a) 30 **b)** 4

5. a) 54 **b)** 5

4.4 Warm Up, page 208

Answers may vary due to measuring. Examples:

1. a) $\angle A = 118°$; $\angle B = 118°$; $\angle C = 57°$; $\angle D = 67°$ **b)** $\angle J = 101°$; $\angle K = 121°$; $\angle L = 100°$; $\angle M = 102°$; $\angle N = 116°$

2. $\angle P = 125°$; $\angle Q = 90°$; $\angle R = 90°$; $\angle S = 55°$; PQ = 1.9 cm; QR = 1.4 cm; RS = 2.9 cm; PS = 1.7 cm

5.1 Warm Up, page 241

1. $6 \times y$

2.

Expression	Base	Exponent	Repeated Multiplication
a) 3^2	3	2	3×3
b) x^2	x	2	$x \times x$
c) y^2	y	2	$y \times y$
d) t^1	t	1	t

3. a) $3x$ **b)** $-2x + 4$ **c)** $5x - 3$

4. a) h **b)** x and y

5. a) 2 **b)** -8

5.2 Warm Up, page 251

1. $-x^2 + 3x - 5$

2. 2

3. -7

4. a) $5 + 2$ **b)** $15 + 7 + (-7)$ **c)** $4 + 2 + (-5)$ **d)** $1 + 17 + (-5)$ **e)** $2 + 8 + (-8) + 7$

5. a)

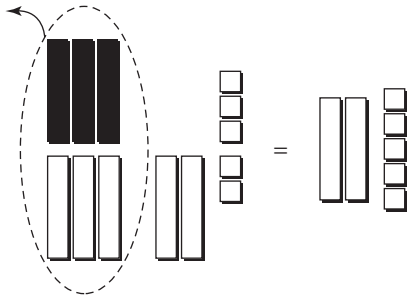
b)

6. a) 2 **b)** 1

5.3 Warm Up, page 262

1. a) $-3x + 4$ **b)** binomial

2.



3. $-x^2 + 4x - 10$

4.

Monomial	Opposite	Sum of Monomial and Opposite
a) 5	-5	0
b) -3	3	0

5. a) -7 **b)** 19

6. a) 5; 5 **b)** -11; $4 + (-15) = -11$

6.1 Warm Up, page 294

1. Answers will vary. Examples: **a)** d **b)** r **c)** c **d)** a

2. a) $c = 20t$ **b)** $d = \frac{1}{2}s$ or $2d = s$

3. a) Pattern: 10; Equation: $y = 10x$ **b)** Pattern: add 6 to the input; Equation: $y = x + 6$

4. a) 4 **b)** $a = -3$

6.2 Warm Up, page 310

1. A(0, 2) B(1, 3) C(2, 4) D(3, 5) E(4, 6)

2. Estimates will vary. Example: A (2, 5) B(4, 11) C(6, 17) D(8, 23.5)

3. a) at home **b)** 3 km away **c)** 0.8 km away

4. a) NO; Answers will vary. Example: You cannot have 1.2 people.
b) YES; Answers will vary. Example: You can have 1.2 L of water.

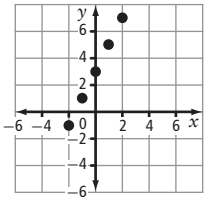
6.3 Warm Up, page 321

1. Answers will vary. Example: The input (x) times 5 equals the output (y).

2. Answers will vary. Example: The y-value is always 8.

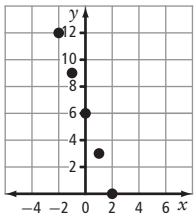
3. a)

x	y	(x, y)
−2	−1	(−2, −1)
−1	1	(−1, 1)
0	3	(0, 3)
1	5	(1, 5)
2	7	(2, 7)



b)

x	y	(x, y)
−2	12	(−2, 12)
−1	9	(−1, 9)
0	6	(0, 6)
1	3	(1, 3)
2	0	(2, 0)



7.1 Warm Up, page 366

1. a) 2^7 **b)** 5^3 **c)** 4^8 **d)** 10^5

2. a) 2^2 **b)** 4^0 **c)** 5^3 **d)** 7^4

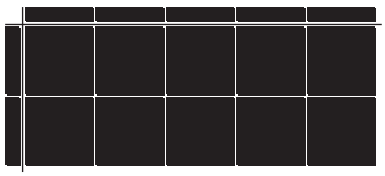
3. a) 6 **b)** −4 **c)** −3 **d)** 4

4. a) −30 **b)** 42 **c)** 40 **d)** −36

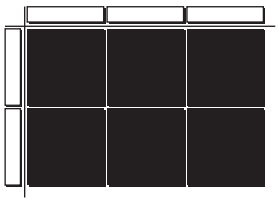
7.2 Warm Up, page 378

1. a) $(3x)(3x) = 9x^2$ **b)** $(-2x)(-2x) = 4x^2$

2. a) $10x^2$;



b) $6x^2$;

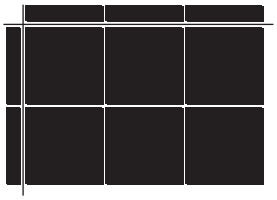


3. a) $15n^2$ **b)** $-24y^2$ **c)** $-6.4w^2$ **d)** $-7t^2$

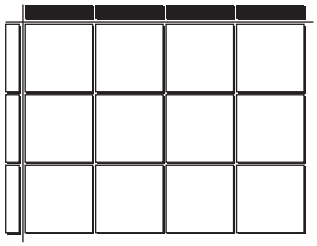
7.3 Warm Up, page 387

1. a) $6x^2 \div 2x = 3x$ **b)** $9x^2 \div (-3x) = (-3x)$ **c)** $-6x^2 \div (-2x) = 3x$
d) $4x^2 \div (-2x) = (-2x)$

2. a) $3x$;



b) $-3x$;



8.1 Warm Up, page 424

1. a) $\frac{1}{2}$ **b)** $-\frac{3}{8}$

2. a) $\frac{11}{4}$ **b)** $-\frac{11}{6}$

3. a) $\frac{3}{5}$ **b)** 2

4. a) 3.5 **b)** −15.9

5. a) multiply by 3 **b)** add −5 **c)** divide by 5 **d)** subtract 6

8.2 Warm Up, page 440

1. a) $\frac{1}{2}$ **b)** $-\frac{7}{4}$ or $-1\frac{3}{4}$

2. a) $-\frac{2}{8}$ or $-\frac{1}{4}$ **b)** $\frac{9}{12}$ or $\frac{3}{4}$

3. a) $2m + 24$ **b)** $\frac{1}{4}x$ or $\frac{x}{4}$ or $0.25x$ **c)** $y - 5$

d) $\frac{1}{2}n - 5$ or $0.5n - 5$ or $\frac{n}{2} - 5$

8.3 Warm Up, page 457

1. a) $18 = 8d + 9$ **b)** $2(t - 1) = 15$ or $2t - 2 = 15$

2. a) $\frac{11}{12}$ **b)** $-\frac{3}{4}$

3. a) $3x - 3.6$ **b)** $-4m - 9.2$

8.4 Warm Up, page 468

1. a) 125¢ or $1.25 **b)** 81¢ or $0.81

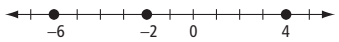
2. a) $f = -3$ **b)** $m = 3.15$

3. a) $x = -\frac{6}{5}$ **b)** $x = 16$

4. a) $8.5b$ **b)** $0.1x$ **c)** $-1.7a$ **d)** $-1.5d$

9.1 Warm Up, page 503

1.



2. a) A: 4.2; B: 4.7 **b)** C: 138; D: 162 **c)** E: $-\frac{5}{9}$; F: $-\frac{8}{9}$

3. a) FALSE; −5 is less than −3. **b)** TRUE **c)** TRUE

d) FALSE; $\frac{3}{10}$ can be written as 0.3.

9.2 Warm Up, page 515

1. a) $x = 8$ **b)** $y = 1.1$ **c)** $x = -30$ **d)** $x = 10.8$

2. a) $\geq$ **b)** $\geq$ **c)** $<$ **d)** $\leq$ **e)** $>$ **f)** $\neq$

9.3 Warm Up, page 528

1. a) $x < -13$ **b)** $y \leq 140$

2. a) −5 **b)** $x = 12$

3. a) 2 **b)** $x = -5$

10.1 Warm Up, page 563

1. a) AC, BC, FC, EC, DC **b)** AE, BD

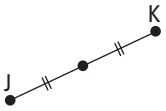
2. a) 13 cm **b)** 5 cm

3. a) 36 **b)** 100 **c)** 4 **d)** 7 **e)** 90 **f)** 45

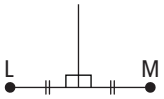
10.2 Warm Up, page 575

1. a)

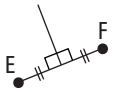
b)



2. a)



b)



3. 3 cm

4. a) 20 cm **b)** 4.5 cm

10.3 Warm Up, page 584

1. a) equilateral **b)** right **c)** isosceles **d)** isosceles

2. AB, ED

3. a) 38° **b)** 100°

4. a) 115° **b)** 138°

11.1 Warm Up, page 617

1. a) approximately 98 books **b)** Adventure books

2. a) 66.7% **b)** NO. The circle graph shows 100% of the books they signed out.

3. 50

4. 10% of the school was surveyed.

11.2 Warm Up, page 625

1. Answers may vary. Examples: Since there are so many people who live in a country, it might be difficult or expensive to survey all of them.

2. more; more *or* less; less

3. a) 35 **b)** 197

4. a) 5% **b)** 20%

5. 1, 8, 15, 22, 29, 36, 43, 50, 57, 64, 71, 78, 85, 92, 99

11.3 Warm Up, page 635

1. Answers may vary. Example: A weather forecast gives the probability of precipitation. A high probability means it probably will rain or snow, but doesn't always mean it will for sure.

2. a) $\frac{13}{52}$; 0.25; 25% **b)** $\frac{2}{5}$; 0.4; 40%

3. a) mean = 10.6; median = 10; mode = 13 **b)** mean = 112.8; median = 111;
mode = 111 and 100

11.4 Warm Up, page 649

1. part

2. Answers may vary. Examples: **a)** Asking only teachers about changing the school hours. **b)** Asking only the people entering a mall about the cleanliness of the mall. **c)** Picking names from a hat. **d)** Sending a questionnaire in the mail.

3. a) sample; average; population **b)** The average number of sea lice on 90 salmon is 3.