Practice

a. m$\angle$R = 25°, m$\angle$Q = 130°

b. k = 25°, a= 100°

c. S = 40, M = 40, D = 70

d. y = 5/3

Problem Set

1. q = 50°, p = 80°

2. M = 50°, D = 100°, S = 80°

3. y = $\frac{16}{3}$

4. 27.33 cm

5. 41.42 m

6. $V_{cylinder} = 169.56\ ft^3$, $V_{sphere} = 113.04\ ft^3$

7. 50°

8. p = 110°, q = 7°, r = 22°

9. -22

10. 702

11. 198

12. -95

13. -20

14. 34

15. -56

16. -95

17. -1

18. $-\frac{2}{11}$

19. 31

20. 24

Practice

a. $-\frac{1}{36}$

b. $-\frac{1}{9}$

c. b^3c^2

d. 50.24 m²

Problem Set

1. y = $\frac{24}{5}$

2. m = 48°, s = 84°

3. 95.97 cm³

4. p = 100°, q = 20°, r = 50°

5. Height = 10 m

6. 32.37 m³

7. w^3z^{-19}

8. ab^{-1}

9. $t^{13}s^{-2}$

10. d^2b^7

11. $\frac{m^{10}}{n}$

12. $\frac{z^3}{r^2}$

13. $\frac{w^{-3}z^{-5}}{x^{-5}}$

14. $\frac{m^{-7}}{u^{-2}z^{-6}}$

15. $\frac{1}{z^{-8}v^{-5}}$

16. $-\frac{1}{16}$

17. -25

18. -5

19. -37

20. 21

Practice

a. 9

b. -55

c. -9

d. $\frac{3}{w^3} - \frac{2}{w^4} + \frac{z^4}{w}$

e. $\frac{6}{bc} + \frac{c^6}{b}$

Problem Set

1. y = $\frac{20}{3}$, r = 14, q = 48

2. 14.13 m

3. M = 30°, S = 120°

4. 16.55 meters

5. -57

6. -3

7. 720

8. 1

9. 24

10. $kz^5 + 5k^2z^4 - 6z^4k^3$

11. $-a^4+1+3a$
12. $-3c^2d^2-3c^5d^3+3c^4d^4$
13. $\frac{1}{a^6}$
14. $\frac{ab^2c^3}{d^3}$
15. $\frac{x^{12}}{a^{19}}$
16. $\frac{d^6}{c^8}$
17. $\frac{71}{8}$
18. 62
19. -25
20. -13

Practice

a. $\frac{16d^2}{c^5} - \frac{4d^4}{ec^6}$

b. a = $\frac{5}{6}$

c. x = $\frac{1}{18}$

Problem Set

1. (a) πa^2 (b) $9a^2\pi\ cm^2$

2. x = $\frac{35}{24}$, r = 26, q = 34

3. x = 30, u = 30, v = 150, w = 15, t = 15

4. Area of square = 144m²

   Radius of circle = 2m

   Area of shaded portion = 30.96m

5. c = $\frac{31}{2}$

6. s = $\frac{10}{7}$

7. x = $\frac{3}{10}$

8. x = $\frac{11}{7}$

9. $\frac{1}{x^7} - \frac{6}{x^{10}z}$

10. $\frac{1}{es^3r^6} - \frac{4s}{e^2r^2}$

11. $\frac{3y^4}{32x^{14}}$

12. $5a^5b^6$

13. $6a^8 - 4a^3b^2 + b$

14. $4ab - 5a^4b^{-2} + 3a^3b^{-4}$

15. 6

16. $\frac{1}{4}$

17. -48

18. $-\frac{25}{8}$

19. $\frac{5}{9}$

20. $-\frac{255}{16}$

Practice

a. -15

b. 507 pieces

Problem Set

1. -5

2. 10 carrots

3. 84 balls

4. H = 33 cm, AN = 26 cm, Area of triangle ANI = 29 cm

5. x = 56, y = 62

6. Radius = 7 m, Area = 153.86 m², Volume = 615.44 m³

7. x = $\frac{23}{30}$

8. x = 1

9. w = $\frac{2}{7}$

10. w = $\frac{9}{11}$

11. $\frac{-6ac^2}{d^3} + \frac{3}{cd^2}$

12. $\frac{3d^2x^3}{c} - \frac{d^2x^5}{c^2}$

13. $3x^{-2}$

14. $\frac{r^2}{64s^8}$

15. $c^4d^4 - 3c^2d^2 + \frac{6c^2}{d^4}$

16. $w^2c - 4c^2w^3$

17. -55

18. $\frac{11}{16}$

19. -17

20. $\frac{15}{4}$

Practice

a. 26676 stars

b. 13, 14, 15

Problem Set

1. 32500 teachers

2. 1698 were not adults

3. 2

4. 42 workers

5. 19, 20, 21, 22

6. r = $\frac{\sqrt{32}}{2}$ m

7. C = 120°

8. x = 185

9. x = $-\frac{1}{48}$

10. x = $\frac{7}{2}$

11. $\frac{-2}{b^2} + 3w^2$

12. $3d - \frac{d}{x}$

13. $\frac{x^4 w^8}{27}$

14. $\frac{1}{x^5 y^3 z}$

15. $-3bc + 3bc^{-1} - 3c$

16. $-2b^4c - 8b^2c^4 + 4b^3c^2$

17. -54

18. $\frac{1}{108}$

19. 3

20. 22

Practice

a. 155

b. 800

c. x = 26, S = 84, M = 84

Problem Set

1. 900

2. 600%

3. 1000

4. 4300%

5. -2, -1, 0

6. x = 15

7. x = 33

8. $\angle$p = 20° , $\angle$q = 40° , $\angle$r = 90° , $\angle$s = 30°

9. s = $\frac{3}{16}$

10. x = 2

11. x = $\frac{15}{19}$

12. $4 - \frac{8ab^2x}{c^2}$

13. 64d

14. $-\frac{5x^3y^2}{z}+\frac{6x^4z}{y}-\frac{4x^3y^2}{z^2}$

15. $-5xs^2+2s-s^3x$

16. 5

17. -18

18. -270

19. 5

20. -30