Year 9 Homework Sheet 1.3

1. Calculate leaving your answer as an improper fraction in its simplest form.

$(a)\quad 3\frac{4}{5}+3\frac{9}{10}=$ $(b)\quad 2\frac{5}{6}-1\frac{7}{12}=$

$(c)\quad 2\frac{1}{2}\times 1\frac{2}{3}=$ $(d)\quad 1\frac{1}{5}\div 2\frac{2}{7}=$

2. Use the formula $s=ut+\frac{1}{2}at^2$ to find s. Round your answer to the nearest whole number.

$(a)\quad u=1, a=-8 \;\&\; t=4,$ $(b)\quad u=-8.6, a=-0.7 \;\&\; t=2$

3. Expand and Simplify:

$(a)\quad 8(7x-8)=$ $(b)\quad -3-5(2x-4)=$

$(c)\quad -8(2x-9)-4(2x+1)=$ $(d)\quad 2x(4x+3)+7(4x+3)=$

4. Draw a sketch of a **kite** and show all its properties using symbols where appropriate.

5. (a) Write the ratio 44:55 in its simplest form.

(b) Bill and Ben are selling their gardening equipment for $\$102$. They divide the money on the ration $1:5$. How much do each of them get?

(c) Gill is making mi$x$ed fruit juice. She makes it by mixing orange juice, apple juice and pineapple juice in the ratio $2:3:3$ respectively. If she uses $64\ ml$ of orange juice, how much apple and pineapple juice does she need?

6. Calculate the mean in each of the frequency tables below. Give your answer to 3 significant figures:

x	Frequency
1	1
2	5
3	4
4	7
5	1

x	Frequency
1	0
2	5
3	4
4	7
5	4

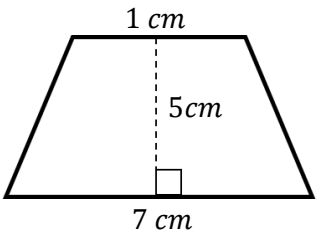
7. Solve leaving your answer as an improper fraction in its simplest form:

$(a)\quad 8x+8=-64$ $(b)\quad 6x+6=-3x-3$

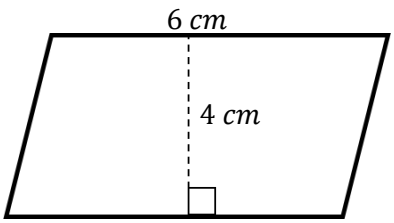
$(c)\quad 5(4x+2)=-x+3$ $(d)\quad -4(4x+7)=-(2x+9)$

8. Find the area of the trapezium and parallelogram.

(a)



(b)



Year 9 Homework Sheet 1.4

1. Calculate leaving your answer as an improper fraction in its simplest form.

$(a)\quad 3\frac{4}{9}+3\frac{1}{8}=$ $(b)\quad 2\frac{2}{11}-2\frac{3}{8}=$

$(c)\quad 1\frac{8}{11}\times 3\frac{7}{8}=$ $(d)\quad 1\frac{10}{11}\div 1\frac{3}{4}=$

2. Use the formula $s=ut+\frac{1}{2}at^2$ to find s. Round your answer to the nearest whole number.

$(a)\quad u=7, a=3\ \&\ t=6,$ $(b)\quad u=3.2, a=5.5\ \&\ t=6$

3. Expand and Simplify:

$(a)\quad -3(4x-5)=$ $(b)\quad 8-9(9x-6)=$

$(c)\quad 6(x+4)+3(2x-1)=$ $(d)\quad -5x(3x+8)+2(x+7)=$

4. Draw a sketch of a **trapezium** and show all its properties using symbols where appropriate.

5. (a) Write the ratio 3:6 in its simplest form.

(b) Bill and Ben are selling their gardening equipment for $\$105$. They divide the money on the ration $3:2$. How much do each of them get?

(c) Gill is making mi$x$ed fruit juice. She makes it by mixing orange juice, apple juice and pineapple juice in the ratio $7:7:6$ respectively. If she uses $266\ ml$ of orange juice, how much apple and pineapple juice does she need?

6. Calculate the mean in each of the frequency tables below. Give your answer to 3 significant figures:

x	Frequency
1	0
2	4
3	4
4	8
5	2

x	Frequency
1	1
2	3
3	4
4	8
5	4

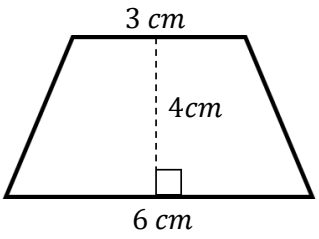
7. Solve leaving your answer as an improper fraction in its simplest form:

$(a)\quad -\mathrm{x}+5=10$ $(b)\quad -2\mathrm{x}-11=6\mathrm{x}+4$

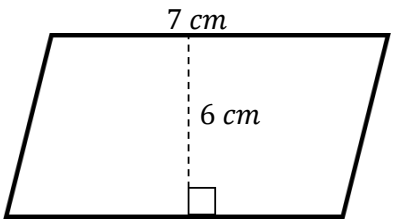
$(c)\quad -(-\mathrm{x}+4)=-5\mathrm{x}+5$ $(d)\quad 5(-\mathrm{x}+1)=4(-3\mathrm{x}+7)$

8. Find the area of the trapezium and parallelogram.

(a)



(b)



Year 9 Homework Sheet 1.5

1. Calculate leaving your answer as an improper fraction in its simplest form.

$(a)\quad 2\frac{1}{3}+2\frac{1}{2}=$ $(b)\quad 1\frac{9}{11}-2\frac{1}{2}=$

$(c)\quad 3\frac{4}{9}\times 2\frac{8}{11}=$ $(d)\quad 1\frac{2}{3}\div 3\frac{3}{8}=$

2. Use the formula $s=ut+\frac{1}{2}at^2$ to find s. Round your answer to the nearest whole number.

$(a)\quad u=1, a=-5 \;\&\; t=2,$ $(b)\quad u=-9.8, a=0.6 \;\&\; t=7$

3. Expand and Simplify:

$(a)\quad 8(4x-4)=$ $(b)\quad -5+2(3x+2)=$

$(c)\quad 5(5x+7)-1(2x-3)=$ $(d)\quad -9x(4x-3)-7(4x+4)=$

4. Draw a sketch of a **kite** and show all its properties using symbols where appropriate.

5. (a) Write the ratio 25:40 in its simplest form.

(b) Bill and Ben are selling their gardening equipment for $\$192$. They divide the money on the ration $5:7$. How much do each of them get?

(c) Gill is making mi*x*ed fruit juice. She makes it by mixing orange juice, apple juice and pineapple juice in the ratio $5:7:4$ respectively. If she uses $110\ ml$ of orange juice, how much apple and pineapple juice does she need?

6. Calculate the mean in each of the frequency tables below. Give your answer to 3 significant figures:

x	Frequency
1	0
2	4
3	4
4	8
5	3

x	Frequency
1	1
2	4
3	4
4	8
5	3

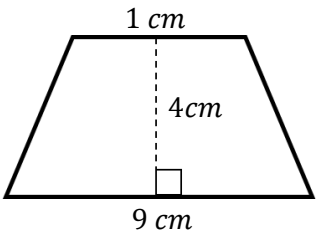
7. Solve leaving your answer as an improper fraction in its simplest form:

$(a)\quad -3x-4=-13$ $(b)\quad 8x+3=-4x+8$

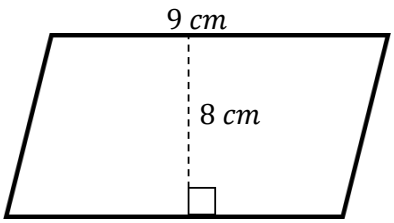
$(c)\quad 5(-5x-3)=5x+2$ $(d)\quad 3(-x+4)=-5(-4x+5)$

8. Find the area of the trapezium and parallelogram.

(a)



(b)



Year 9 Homework Sheet 1.6

1. Calculate leaving your answer as an improper fraction in its simplest form.

(a) $3\frac{9}{11}+3\frac{7}{12}=$ (b) $2\frac{4}{11}-1\frac{3}{5}=$

(c) $3\frac{4}{5}\times 2\frac{3}{7}=$ (d) $3\frac{5}{6}\div 3\frac{2}{3}=$

2. Use the formula $s=ut+\frac{1}{2}at^2$ to find s. Round your answer to the nearest whole number.

(a) $u=$ - 5, $a=$ 9 & $t=2$, (b) $u=$ 7.2, $a=$ - 3.7 & $t=4$

3. Expand and Simplify:

(a) $8(7x+8)=$ (b) $-7-5(2x+3)=$

(c) $5(5x-6)-2(2x-6)=$ (d) $9x(2x+1)-1(2x-3)=$

4. Draw a sketch of a **parallelogram** and show all its properties using symbols where appropriate.

5. (a) Write the ratio 4:36 in its simplest form.

(b) Bill and Ben are selling their gardening equipment for $\$50$. They divide the money on the ration $1:4$. How much do each of them get?

(c) Gill is making mi$x$ed fruit juice. She makes it by mixing orange juice, apple juice and pineapple juice in the ratio $4:2:5$ respectively. If she uses $96\ ml$ of orange juice, how much apple and pineapple juice does she need?

6. Calculate the mean in each of the frequency tables below. Give your answer to 3 significant figures:

x	Frequency
1	1
2	5
3	4
4	7
5	1

x	Frequency
1	0
2	4
3	4
4	7
5	5

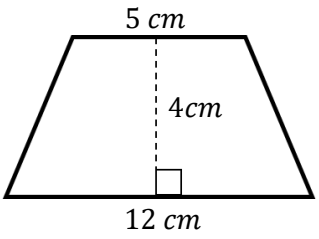
7. Solve leaving your answer as an improper fraction in its simplest form:

(a) $-4\mathrm{x}-2=2$ (b) $5\mathrm{x}+2=-7\mathrm{x}-7$

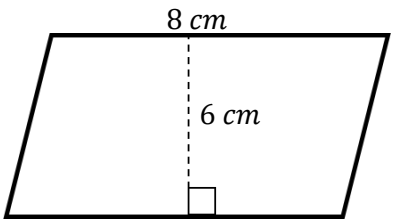
(c) $-5(4\mathrm{x}-3)=-\mathrm{x}+1$ (d) $2(-3\mathrm{x}-8)=-(-4\mathrm{x}-6)$

8. Find the area of the trapezium and parallelogram.

(a)



(b)



Year 9 Homework Sheet 1.7

1. Calculate leaving your answer as an improper fraction in its simplest form.

$(a)\quad 1\frac{6}{7}+3\frac{7}{8}=$ $(b)\quad 2\frac{1}{10}-3\frac{5}{11}=$

$(c)\quad 2\frac{5}{6}\times 2\frac{2}{3}=$ $(d)\quad 3\frac{2}{3}\div 1\frac{8}{11}=$

2. Use the formula $s=ut+\frac{1}{2}at^2$ to find s. Round your answer to the nearest whole number.

$(a)\quad u=7, a=-8 \;\&\; t=8,$ $(b)\quad u=2.3, a=-2.7 \;\&\; t=6$

3. Expand and Simplify:

$(a)\quad -8(3x+6)=$ $(b)\quad -6-9(3x-5)=$

$(c)\quad 3(x+5)+3(5x+8)=$ $(d)\quad 5x(2x-8)+2(x-5)=$

4. Draw a sketch of a **kite** and show all its properties using symbols where appropriate.

5. (a) Write the ratio 81:45 in its simplest form.

(b) Bill and Ben are selling their gardening equipment for $\$264$. They divide the money on the ration $7:5$. How much do each of them get?

(c) Gill is making mi$x$ed fruit juice. She makes it by mixing orange juice, apple juice and pineapple juice in the ratio $2:3:6$ respectively. If she uses $76\ ml$ of orange juice, how much apple and pineapple juice does she need?

6. Calculate the mean in each of the frequency tables below. Give your answer to 3 significant figures:

x	Frequency
1	0
2	3
3	6
4	7
5	5

x	Frequency
1	1
2	4
3	6
4	7
5	2

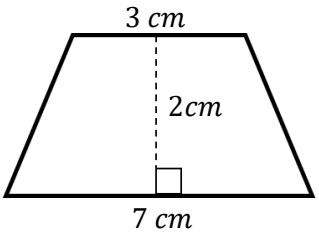
7. Solve leaving your answer as an improper fraction in its simplest form:

$(a)\quad 9x-5=76$ $(b)\quad -4x+13=6x-14$

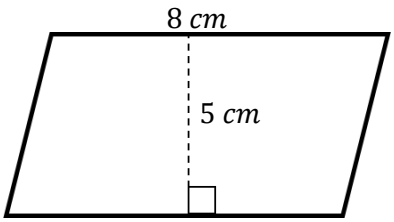
$(c)\quad 4(-4x+6)=3x+3$ $(d)\quad -3(4x+4)=-3(-5x-4)$

8. Find the area of the trapezium and parallelogram.

(a)



(b)



Year 9 Homework Sheet 1.8

1. Calculate leaving your answer as an improper fraction in its simplest form.

$(a)\quad 2\frac{1}{2}+3\frac{3}{4}=$ $(b)\quad 3\frac{5}{6}-2\frac{2}{5}=$

$(c)\quad 2\frac{1}{2}\times 2\frac{1}{8}=$ $(d)\quad 3\frac{3}{4}\div 3\frac{5}{11}=$

2. Use the formula $s=ut+\frac{1}{2}at^2$ to find s. Round your answer to the nearest whole number.

$(a)\quad u=\text{-}\,5, a=\ 8\ \&\ t=2,$ $(b)\quad u=\ 2.7, a=\ 3.1\ \&\ t=3$

3. Expand and Simplify:

$(a)\quad -8(7x-5)=$ $(b)\quad -3+3(7x-1)=$

$(c)\quad 9(x-4)+7(5x+5)=$ $(d)\quad -8x(x+5)-1(2x-3)=$

4. Draw a sketch of a **rhombus** and show all its properties using symbols where appropriate.

5. (a) Write the ratio 5:10 in its simplest form.

(b) Bill and Ben are selling their gardening equipment for $\$63$. They divide the money on the ration $4:3$. How much do each of them get?

(c) Gill is making mi$x$ed fruit juice. She makes it by mixing orange juice, apple juice and pineapple juice in the ratio $8:5:1$ respectively. If she uses $200\ ml$ of orange juice, how much apple and pineapple juice does she need?

6. Calculate the mean in each of the frequency tables below. Give your answer to 3 significant figures:

x	Frequency
1	0
2	4
3	6
4	7
5	4

x	Frequency
1	1
2	4
3	6
4	7
5	2

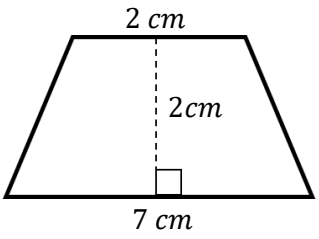
7. Solve leaving your answer as an improper fraction in its simplest form:

$(a)\quad 5\mathrm{x}+7=2$ $(b)\quad -8\mathrm{x}+6=-6\mathrm{x}+4$

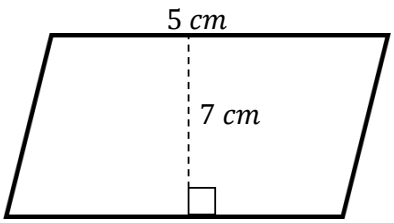
$(c)\quad 5(4\mathrm{x}+7)=-5\mathrm{x}+6$ $(d)\quad -2(3\mathrm{x}+9)=5(4\mathrm{x}+6)$

8. Find the area of the trapezium and parallelogram.

(a)



(b)



Year 9 Homework Sheet 1.9

1. Calculate leaving your answer as an improper fraction in its simplest form.

$(a)\quad 1\frac{4}{7}+3\frac{10}{11}=$ $(b)\quad 1\frac{8}{9}-2\frac{10}{11}=$

$(c)\quad 3\frac{5}{8}\times 2\frac{8}{9}=$ $(d)\quad 2\frac{1}{3}\div 2\frac{3}{4}=$

2. Use the formula $s=ut+\frac{1}{2}at^2$ to find s. Round your answer to the nearest whole number.

$(a)\quad u=2, a=0 \ \&\ t=9,$ $(b)\quad u=3.7, a=8.8 \ \&\ t=8$

3. Expand and Simplify:

$(a)\quad -3(7x-5)=$ $(b)\quad 4+9(5x-6)=$

$(c)\quad -8(2x-5)-9(x+5)=$ $(d)\quad -8x(x+8)-9(5x-9)=$

4. Draw a sketch of a **kite** and show all its properties using symbols where appropriate.

5. (a) Write the ratio 28:8 in its simplest form.

(b) Bill and Ben are selling their gardening equipment for $\$55$. They divide the money on the ration $3:8$. How much do each of them get?

(c) Gill is making mi$x$ed fruit juice. She makes it by mixing orange juice, apple juice and pineapple juice in the ratio $2:9:3$ respectively. If she uses $46\ ml$ of orange juice, how much apple and pineapple juice does she need?

6. Calculate the mean in each of the frequency tables below. Give your answer to 3 significant figures:

x	Frequency
1	1
2	3
3	5
4	8
5	4

x	Frequency
1	0
2	5
3	5
4	8
5	2

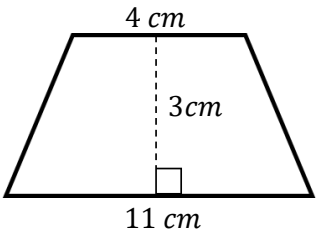
7. Solve leaving your answer as an improper fraction in its simplest form:

$(a)\quad 4x-9=-45$ $(b)\quad -3x-20=6x+8$

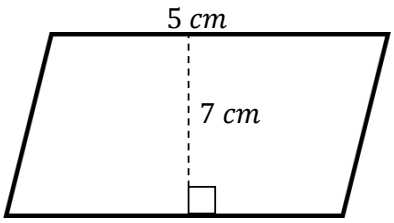
$(c)\quad -4(-3x+1)=5x+3$ $(d)\quad -4(3x-1)=5(4x-7)$

8. Find the area of the trapezium and parallelogram.

(a)



(b)



Year 9 Homework Sheet 1.10

1. Calculate leaving your answer as an improper fraction in its simplest form.

$(a)\quad 1\frac{1}{2}+2\frac{5}{8}=$ $(b)\quad 3\frac{1}{6}-2\frac{1}{2}=$

$(c)\quad 1\frac{9}{10}\times 2\frac{2}{3}=$ $(d)\quad 2\frac{5}{6}\div 3\frac{5}{11}=$

2. Use the formula $s=ut+\frac{1}{2}at^2$ to find s. Round your answer to the nearest whole number.

$(a)\quad u=\text{-}\,1, a=\ 7\ \&\ t=9,$ $(b)\quad u=\ 8.8, a=\text{-}\,7.0\ \&\ t=4$

3. Expand and Simplify:

$(a)\quad -3(3x+9)=$ $(b)\quad 5-6(3x+2)=$

$(c)\quad 3(5x-7)+8(4x+5)=$ $(d)\quad -3x(2x-2)+3(x+8)=$

4. Draw a sketch of a **kite** and show all its properties using symbols where appropriate.

5. (a) Write the ratio 33:44 in its simplest form.

(b) Bill and Ben are selling their gardening equipment for $\$63$. They divide the money on the ration $7:2$. How much do each of them get?

(c) Gill is making mi$x$ed fruit juice. She makes it by mixing orange juice, apple juice and pineapple juice in the ratio $2:1:3$ respectively. If she uses $76\ ml$ of orange juice, how much apple and pineapple juice does she need?

6. Calculate the mean in each of the frequency tables below. Give your answer to 3 significant figures:

x	Frequency
1	0
2	3
3	5
4	8
5	3

x	Frequency
1	1
2	5
3	5
4	8
5	1

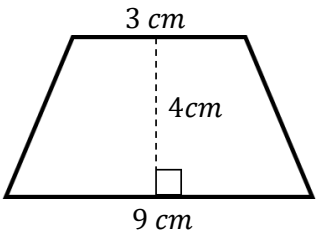
7. Solve leaving your answer as an improper fraction in its simplest form:

$(a)\quad 6\text{x}-9=-33$ $(b)\quad 8\text{x}-11=-4\text{x}-14$

$(c)\quad 3(-3\text{x}+1)=4\text{x}-2$ $(d)\quad -4(3\text{x}-5)=2(-3\text{x}+6)$

8. Find the area of the trapezium and parallelogram.

(a)



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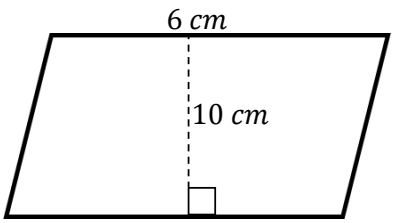


Year 9 Homework Sheet 2.3

1. Simplify leaving your answer in index form.

(a) $6^3 \times 6^4 =$ (b) $3^4 \div 3^2 =$ (c) $\dfrac{4^7 \times 4^4}{4^7} =$

2. Simplify leaving your answer in index form.

(a) $2^5 \times 32 =$ (b) $(3x^2)^4 =$ (c) $2x^{-4}y^{-4} \times 8x^{-4}y^{-2} =$

3. (a) Bob is going on holiday to the UAE and is taking $\$1000$ to spend. If the exchange rate is $\$1 = 3.67\ AED$, how much does he have to spend in dirhams?

(b) After his holiday Bob has 2569 AED left. How much is this in dollars?

4. Vicky has 20 marbles in a bag. 3 marbles are red, 4 are green, 2 are blue and 11 are yellow. If Vicky selects a marble at random what is the probability it is:

(a) red;

(b) green or red;

(c) not yellow.

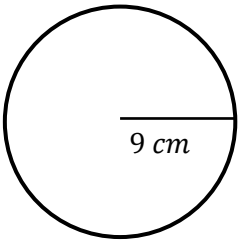
5. Louise rolls a dice and flips a coin.

(a) Draw a sample space diagram to show the possible outcomes.

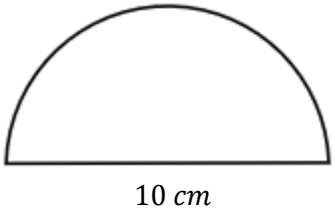
(b) What is the probability of her getting a odd and tails?

6. Find the perimeter and area of the circle and the semi−circle.
Take $\pi = 3.14$ and leave your answer to 2 decimal places.

(a)

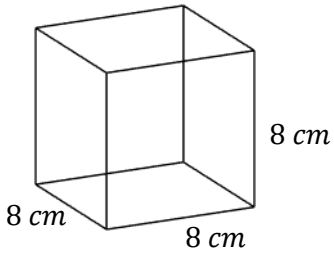


(b)

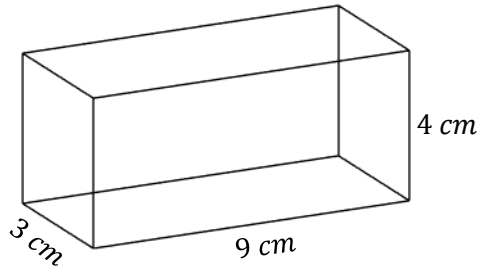


7. Find the volume and surface area of each shape.
Take $\pi = 3.14$ and leave your answer to 2 decimal places where appropriate.

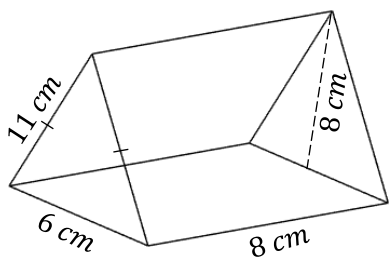
(a)



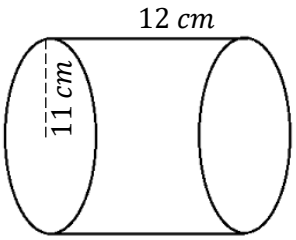
(b)



(b)



(c)



Year 9 Homework Sheet 2.4

1. Simplify leaving your answer in index form.

(a) $3^6 \times 3^4 =$ (b) $3^2 \div 3^2 =$ (c) $\dfrac{5^4 \times 5^5}{5^6} =$

2. Simplify leaving your answer in index form.

(a) $2^4 \times 8 =$ (b) $(3x^5)^4 =$ (c) $5x^{-1}y^2 \times 12x^3y^4 =$

3. (a) Bob is going on holiday to the UAE and is taking $\$1500$ to spend. If the exchange rate is $\$1 = 3.57\ AED$, how much does he have to spend in dirhams?

(b) After his holiday Bob has 4641 AED left. How much is this in dollars?

4. Vicky has 20 marbles in a bag. 5 marbles are red, 4 are green, 2 are blue and 9 are yellow. If Vicky selects a marble at random what is the probability it is:

(a) green;

(b) green or red;

(c) not yellow.

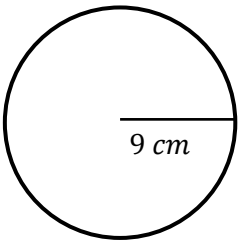
5. Louise rolls a dice and flips a coin.

(a) Draw a sample space diagram to show the possible outcomes.

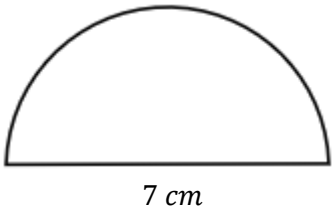
(b) What is the probability of her getting a 5 and heads?

6. Find the perimeter and area of the circle and the semi−circle.
Take $\pi = 3.14$ and leave your answer to 2 decimal places.

(a)

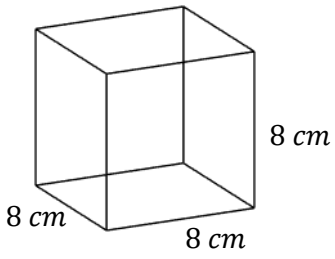


(b)

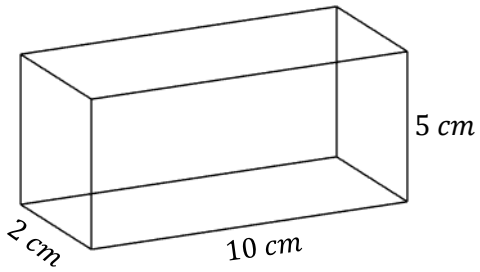


7. Find the volume and surface area of each shape.
Take $\pi = 3.14$ and leave your answer to 2 decimal places where appropriate.

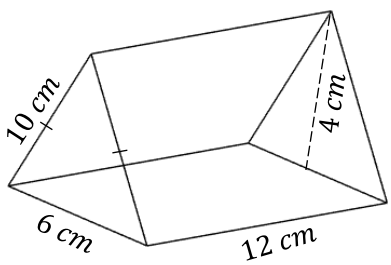
(a)



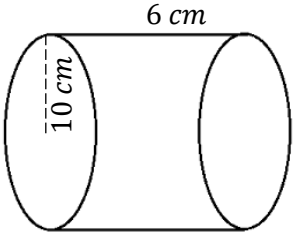
(b)



(b)



(c)



Year 9 Homework Sheet 2.5

1. Simplify leaving your answer in index form.

(a) $2^4 \times 2^3 =$ (b) $8^5 \div 8^2 =$ (c) $\dfrac{7^2 \times 7^2}{7^4} =$

2. Simplify leaving your answer in index form.

(a) $2^5 \times 8 =$ (b) $(3x^4)^4 =$ (c) $5x^6y^{-1} \times 12x^{-2}y^{-1} =$

3. (a) Bob is going on holiday to the UAE and is taking $\$1400$ to spend. If the exchange rate is $\$1 = 3.56\ AED$, how much does he have to spend in dirhams?

(b) After his holiday Bob has 4272 AED left. How much is this in dollars?

4. Vicky has 20 marbles in a bag. 4 marbles are red, 3 are green, 2 are blue and 11 are yellow. If Vicky selects a marble at random what is the probability it is:

(a) green;

(b) red or yellow;

(c) not blue.

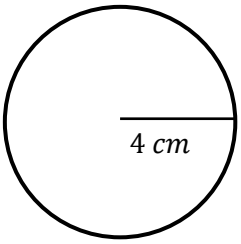
5. Louise rolls a dice and flips a coin.

(a) Draw a sample space diagram to show the possible outcomes.

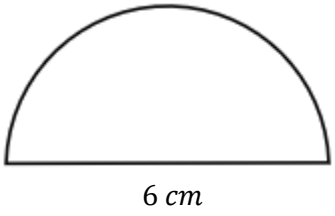
(b) What is the probability of her getting a 3 and tails?

6. Find the perimeter and area of the circle and the semi−circle.
Take $\pi = 3.14$ and leave your answer to 2 decimal places.

(a)

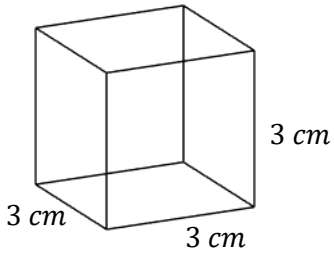


(b)

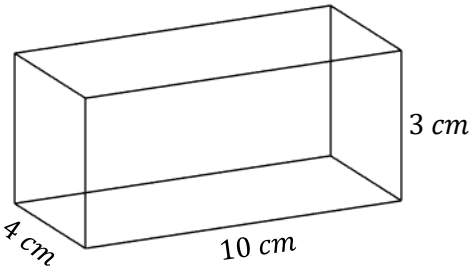


7. Find the volume and surface area of each shape.
Take $\pi = 3.14$ and leave your answer to 2 decimal places where appropriate.

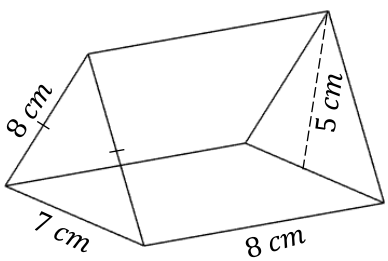
(a)



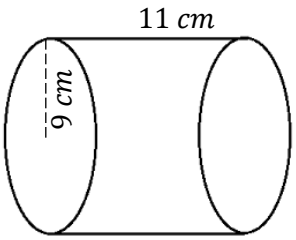
(b)



(b)



(c)



Year 9 Homework Sheet 2.6

1. Simplify leaving your answer in index form.

(a) $2^7 \times 2^3 =$ (b) $9^2 \div 9^5 =$ (c) $\dfrac{7^5 \times 7^3}{7^6} =$

2. Simplify leaving your answer in index form.

(a) $2^6 \times 4 =$ (b) $(4x^4)^3 =$ (c) $12x^4y^3 \times 12x^{-4}y^2 =$

3. (a) Bob is going on holiday to the UAE and is taking $\$1300$ to spend. If the exchange rate is $\$1 = 3.73\ AED$, how much does he have to spend in dirhams?

(b) After his holiday Bob has 3730 AED left. How much is this in dollars?

4. Vicky has 20 marbles in a bag. 4 marbles are red, 4 are green, 6 are blue and 6 are yellow. If Vicky selects a marble at random what is the probability it is:

(a) yellow;

(b) green or yellow;

(c) not yellow.

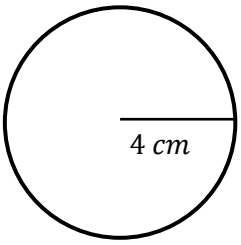
5. Louise rolls a dice and flips a coin.

(a) Draw a sample space diagram to show the possible outcomes.

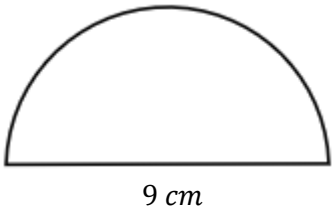
(b) What is the probability of her getting a prime number and heads?

6. Find the perimeter and area of the circle and the semi−circle.
Take $\pi = 3.14$ and leave your answer to 2 decimal places.

(a)

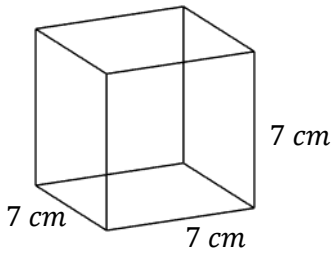


(b)

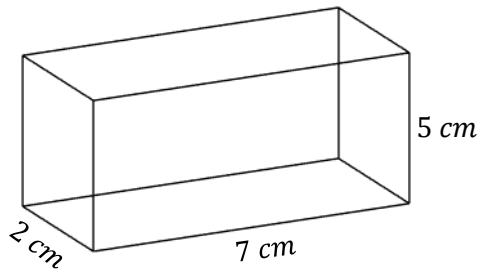


7. Find the volume and surface area of each shape.
Take $\pi = 3.14$ and leave your answer to 2 decimal places where appropriate.

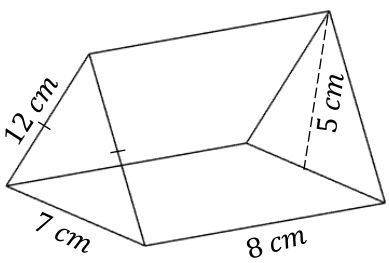
(a)



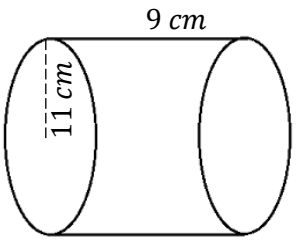
(b)



(b)



(c)



Year 9 Homework Sheet 2.7

1. Simplify leaving your answer in index form.

(a) $6^3 \times 6^6 =$ (b) $6^5 \div 6^2 =$ (c) $\dfrac{2^3 \times 2^2}{2^3} =$

2. Simplify leaving your answer in index form.

(a) $2^6 \times 4 =$ (b) $(4x^4)^4 =$ (c) $6x^{-3}y^2 \times 9x^{-2}y^3 =$

3. (a) Bob is going on holiday to the UAE and is taking $\$1400$ to spend. If the exchange rate is $\$1 = 3.56\ AED$, how much does he have to spend in dirhams?

(b) After his holiday Bob has 3916 AED left. How much is this in dollars?

4. Vicky has 20 marbles in a bag. 2 marbles are red, 5 are green, 2 are blue and 11 are yellow. If Vicky selects a marble at random what is the probability it is:

(a) blue;

(b) yellow or blue;

(c) not green.

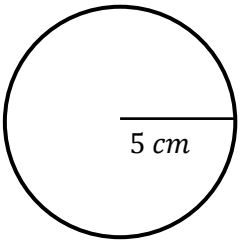
5. Louise rolls a dice and flips a coin.

(a) Draw a sample space diagram to show the possible outcomes.

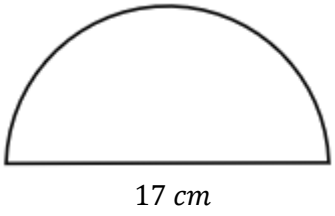
(b) What is the probability of her getting a factor of 12 and tails?

6. Find the perimeter and area of the circle and the semi−circle.
Take $\pi = 3.14$ and leave your answer to 2 decimal places.

(a)

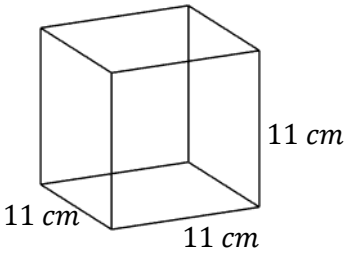


(b)

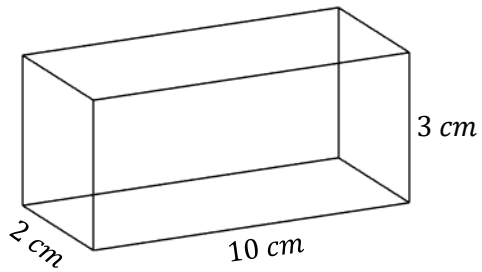


7. Find the volume and surface area of each shape.
Take $\pi = 3.14$ and leave your answer to 2 decimal places where appropriate.

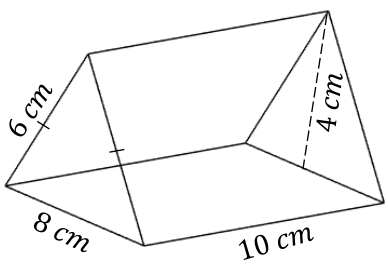
(a)



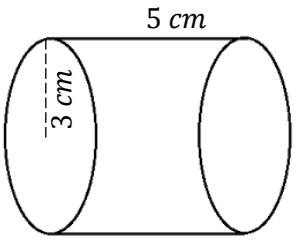
(b)



(b)



(c)



Year 9 Homework Sheet 2.8

1. Simplify leaving your answer in index form.

(a) $9^4 \times 9^6 =$ (b) $4^4 \div 4^5 =$ (c) $\dfrac{8^7 \times 8^5}{8^5} =$

2. Simplify leaving your answer in index form.

(a) $2^5 \times 4 =$ (b) $(3x^2)^4 =$ (c) $10x^6y^{-2} \times 3x^4y^{-4} =$

3. (a) Bob is going on holiday to the UAE and is taking $\$1000$ to spend. If the exchange rate is $\$1 = 3.71\ AED$, how much does he have to spend in dirhams?

(b) After his holiday Bob has 2597 AED left. How much is this in dollars?

4. Vicky has 20 marbles in a bag. 4 marbles are red, 3 are green, 6 are blue and 7 are yellow. If Vicky selects a marble at random what is the probability it is:

(a) blue;

(b) green or red;

(c) not blue.

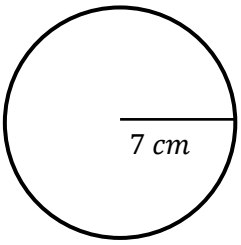
5. Louise rolls a dice and flips a coin.

(a) Draw a sample space diagram to show the possible outcomes.

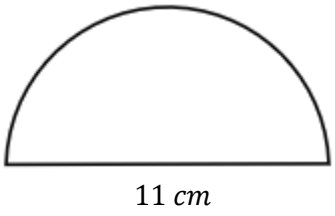
(b) What is the probability of her getting a 4 and tails?

6. Find the perimeter and area of the circle and the semi−circle.
Take $\pi = 3.14$ and leave your answer to 2 decimal places.

(a)

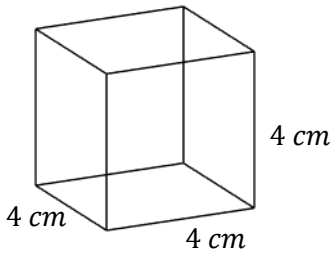


(b)

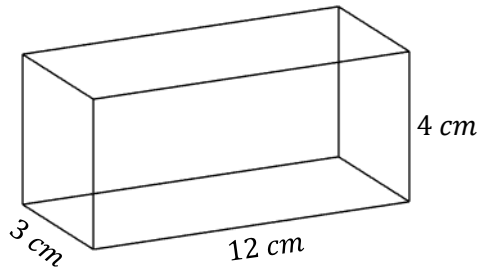


7. Find the volume and surface area of each shape.
Take $\pi = 3.14$ and leave your answer to 2 decimal places where appropriate.

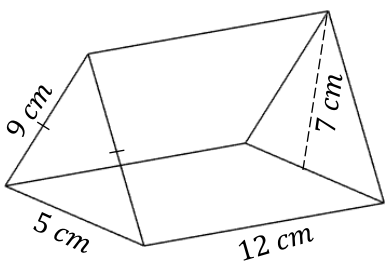
(a)



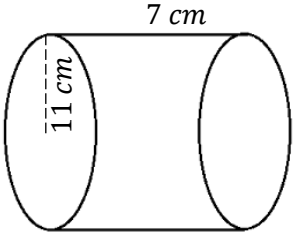
(b)



(b)



(c)



Year 9 Homework Sheet 2.9

1. Simplify leaving your answer in index form.

(a) $4^2 \times 4^2 =$ (b) $7^7 \div 7^7 =$ (c) $\dfrac{6^5 \times 6^4}{6^4} =$

2. Simplify leaving your answer in index form.

(a) $2^3 \times 8 =$ (b) $(3x^4)^4 =$ (c) $2x^6y^2 \times 6x^3y^{-2} =$

3. (a) Bob is going on holiday to the UAE and is taking $\$1300$ to spend. If the exchange rate is $\$1 = 3.61\ AED$, how much does he have to spend in dirhams?

(b) After his holiday Bob has 3610 AED left. How much is this in dollars?

4. Vicky has 20 marbles in a bag. 5 marbles are red, 4 are green, 6 are blue and 5 are yellow. If Vicky selects a marble at random what is the probability it is:

(a) yellow;

(b) yellow or red;

(c) not yellow.

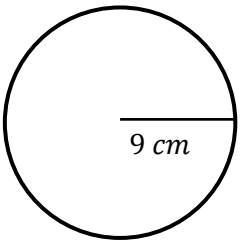
5. Louise rolls a dice and flips a coin.

(a) Draw a sample space diagram to show the possible outcomes.

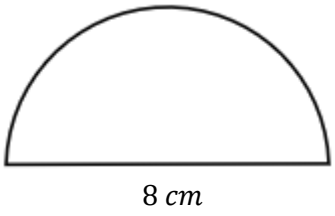
(b) What is the probability of her getting a 2 and heads?

6. Find the perimeter and area of the circle and the semi−circle.
Take $\pi = 3.14$ and leave your answer to 2 decimal places.

(a)

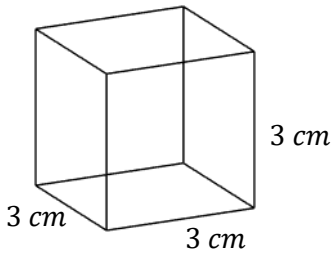


(b)

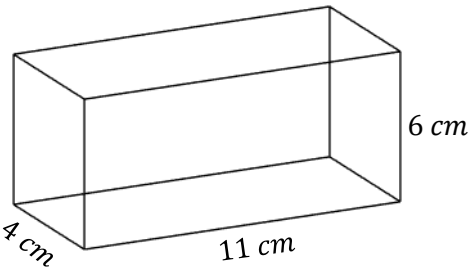


7. Find the volume and surface area of each shape.
Take $\pi = 3.14$ and leave your answer to 2 decimal places where appropriate.

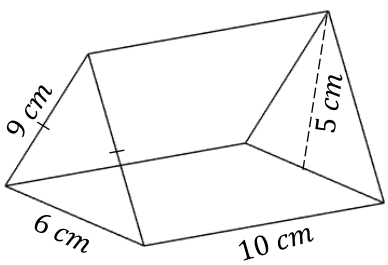
(a)



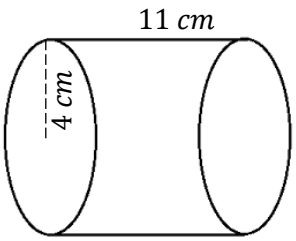
(b)



(b)



(c)



Year 9 Homework Sheet 2.10

1. Simplify leaving your answer in index form.

(a) $4^5 \times 4^6 =$ (b) $5^2 \div 5^6 =$ (c) $\dfrac{9^3 \times 9^2}{9^2} =$

2. Simplify leaving your answer in index form.

(a) $2^3 \times 16 =$ (b) $(4x^2)^4 =$ (c) $7x^4y^{-2} \times 8x^6y^5 =$

3. (a) Bob is going on holiday to the UAE and is taking $\$1100$ to spend. If the exchange rate is $\$1 = 3.61\ AED$, how much does he have to spend in dirhams?

(b) After his holiday Bob has 2527 AED left. How much is this in dollars?

4. Vicky has 20 marbles in a bag. 5 marbles are red, 3 are green, 5 are blue and 7 are yellow. If Vicky selects a marble at random what is the probability it is:

(a) green;

(b) blue or green;

(c) not green.

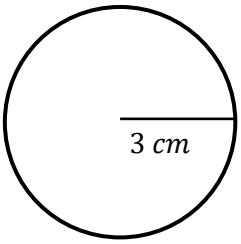
5. Louise rolls a dice and flips a coin.

(a) Draw a sample space diagram to show the possible outcomes.

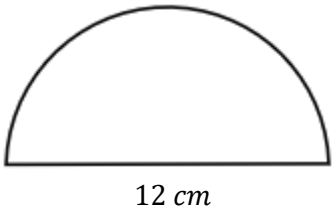
(b) What is the probability of her getting a even and tails?

6. Find the perimeter and area of the circle and the semi−circle.
Take $\pi = 3.14$ and leave your answer to 2 decimal places.

(a)

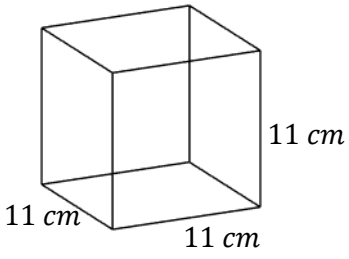


(b)

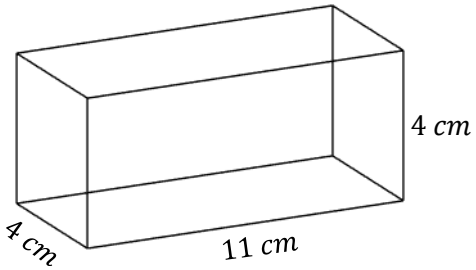


7. Find the volume and surface area of each shape.
Take $\pi = 3.14$ and leave your answer to 2 decimal places where appropriate.

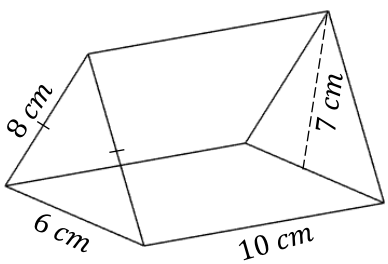
(a)



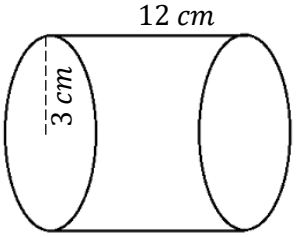
(b)



(b)



(c)



Year 9 Answer Sheet 1.3

1. (a) $\frac{77}{10}$ (b) $\frac{5}{4}$

(c) $\frac{25}{6}$ (d) $\frac{21}{40}$

2. (a) $s = -60$ (b) $s = -19$

3. (a) $56x - 64$ (b) $-10x + 17$

(c) $-24x + 68$ (d) $8x^2 + 34x + 21$

4. (a) See quadrilaterals sheet

5. (a) $44:55$ (b) Bill gets \$17 and Ben gets \$85 (c) 96 ml of apple and 96 ml of pineapple

6. (a) 3.10 (b) 3.50

7. (a) $x = -9$ (b) $x = -1$

(c) $x = -1/3$ (d) $x = -19/14$

8. (a) $Area = 20\ cm^2$ (b) $Area = 24cm^2$

9. (a) $C = 25.12\ cm,$ $A = 50.24\ cm^2$ (b) $P = 28.27\ cm,$ $A = 47.49\ cm^2$

Year 9 Answer Sheet 1.4

1. (a) $\frac{473}{72}$ (b) $\frac{-17}{88}$

(c) $\frac{589}{88}$ (d) $\frac{12}{11}$

2. (a) $s = 96$ (b) $s = 118$

3. (a) $-12x + 15$ (b) $-81x + 62$

(c) $12x + 21$ (d) $-15x^2 - 38x + 14$

4. (a) See quadrilaterals sheet

5. (a) $3:6$ (b) Bill gets \$63 and Ben gets \$42 (c) 266 ml of apple and 228 ml of pineapple

6. (a) 3.40 (b) 3.55

7. (a) $x = -5$ (b) $x = -15/8$

(c) $x = 3/2$ (d) $x = 23/7$

8. (a) $Area = 18\ cm^2$ (b) $Area = 42cm^2$

9. (a) $C = 25.12\ cm,$ $A = 50.24\ cm^2$ (b) $P = 33.41\ cm,$ $A = 66.33\ cm^2$

Year 9 Answer Sheet 1.5

1. (a) $\frac{29}{6}$ (b) $\frac{-15}{22}$

(c) $\frac{310}{33}$ (d) $\frac{40}{81}$

2. (a) $s = -8$ (b) $s = -54$

3. (a) $32x - 32$ (b) $6x - 1$

(c) $23x + 38$ (d) $-36x^2 - 1x - 28$

4. (a) See quadrilaterals sheet

5. (a) $25:40$ (b) Bill gets \$80 and Ben gets \$112 (c) $154\ ml$ of apple and $88\ ml$ of pineapple

6. (a) 3.50 (b) 3.40

7. (a) $x = 3$ (b) $x = 5/12$

(c) $x = -17/30$ (d) $x = 37/23$

8. (a) $Area = 20\ cm^2$ (b) $Area = 72cm^2$

9. (a) $C = 43.96\ cm,$ $A = 153.86\ cm^2$ (b) $P = 20.56\ cm,$ $A = 25.12\ cm^2$

Year 9 Answer Sheet 1.6

1. (a) $\frac{977}{132}$ (b) $\frac{42}{55}$

(c) $\frac{323}{35}$ (d) $\frac{23}{22}$

2. (a) $s = 8$ (b) $s = -1$

3. (a) $56x + 64$ (b) $-10x - 22$

(c) $21x - 18$ (d) $18x^2 + 7x + 3$

4. (a) See quadrilaterals sheet

5. (a) $4:36$ (b) Bill gets \$10 and Ben gets \$40 (c) $48\ ml$ of apple and $120\ ml$ of pineapple

6. (a) 3.10 (b) 3.65

7. (a) $x = -1$ (b) $x = -3/4$

(c) $x = 14/19$ (d) $x = -11/5$

8. (a) $Area = 34\ cm^2$ (b) $Area = 48cm^2$

9. (a) $C = 50.24\ cm,$ $A = 200.96\ cm^2$ (b) $P = 30.84\ cm,$ $A = 56.52\ cm^2$

Year 9 Answer Sheet 1.7

1. (a) $\frac{321}{56}$ (b) $\frac{-149}{110}$

(c) $\frac{68}{9}$ (d) $\frac{121}{57}$

2. (a) $s = $ -200 (b) $s = $ -35

3. (a) $-24x - 48$ (b) $-27x + 39$

(c) $18\text{x} + 39$ (d) $10x^2 - 38\text{x} - 10$

4. (a) See quadrilaterals sheet

5. (a) $81:45$ (b) Bill gets \$154 and Ben gets \$110 (c) $114\ ml$ of apple and $228\ ml$ of pineapple

6. (a) 3.70 (b) 3.25

7. (a) $x = 9$ (b) $x = 27/10$

(c) $x = \ 21/19$ (d) $x = \ -8/9$

8. (a) $Area = 10\ cm^2$ (b) $Area = 40cm^2$

9. (a) $C = 43.96\ cm,$ $A = 153.86\ cm^2$ (b) $P = 28.27\ cm,$ $A = 47.49\ cm^2$

Year 9 Answer Sheet 1.8

1. (a) $\frac{25}{4}$ (b) $\frac{43}{30}$

(c) $\frac{85}{16}$ (d) $\frac{165}{152}$

2. (a) $s = \ 6$ (b) $s = 22$

3. (a) $-56x + 40$ (b) $21x - 6$

(c) $44\text{x} - 1$ (d) $-8x^2 - 42\text{x} + 3$

4. (a) See quadrilaterals sheet

5. (a) $5:10$ (b) Bill gets \$36 and Ben gets \$27 (c) $125\ ml$ of apple and $25\ ml$ of pineapple

6. (a) 3.55 (b) 3.25

7. (a) $x = -1$ (b) $x = 1$

(c) $x = \ -29/25$ (d) $x = \ -24/13$

8. (a) $Area = 9\ cm^2$ (b) $Area = 35cm^2$

9. (a) $C = 56.52\ cm,$ $A = 254.34\ cm^2$ (b) $P = 28.27\ cm,$ $A = 47.49\ cm^2$

Year 9 Answer Sheet 1.9

1. (a) $\frac{422}{77}$ (b) $\frac{-101}{99}$

(c) $\frac{377}{36}$ (d) $\frac{28}{33}$

2. (a) $s = 18$ (b) $s = 311$

3. (a) $-21x + 15$ (b) $45x - 50$

(c) $-25\text{x} - 5$ (d) $-8x^2 - 109\text{x} + 81$

4. (a) See quadrilaterals sheet

5. (a) $28:8$ (b) Bill gets \$15 and Ben gets \$40 (c) 207 ml of apple and 69 ml of pineapple

6. (a) 3.55 (b) 3.35

7. (a) $x = -9$ (b) $x = -28/9$

(c) $x = 1$ (d) $x = 39/32$

8. (a) $Area = 22.5\ cm^2$ (b) $Area = 35cm^2$

9. (a) $C = 43.96\ cm,$ $A = 153.86\ cm^2$ (b) $P = 46.26\ cm,$ $A = 127.17\ cm^2$

Year 9 Answer Sheet 1.10

1. (a) $\frac{33}{8}$ (b) $\frac{2}{3}$

(c) $\frac{76}{15}$ (d) $\frac{187}{228}$

2. (a) $s = 275$ (b) $s =$ -21

3. (a) $-9x - 27$ (b) $-18x - 7$

(c) $47\text{x} + 19$ (d) $-6x^2 + 9\text{x} + 24$

4. (a) See quadrilaterals sheet

5. (a) $33:44$ (b) Bill gets \$49 and Ben gets \$14 (c) 38 ml of apple and 114 ml of pineapple

6. (a) 3.55 (b) 3.15

7. (a) $x = -4$ (b) $x = -1/4$

(c) $x = 5/13$ (d) $x = 4/3$

8. (a) $Area = 24\ cm^2$ (b) $Area = 60cm^2$

9. (a) $C = 50.24\ cm,$ $A = 200.96\ cm^2$ (b) $P = 48.83\ cm,$ $A = 141.69\ cm^2$

Year 9 Answer Sheet 2.3

1. (a) 6^7 (b) 3^2 (c) 4^4

2. (a) 2^{10} (b) $81x^8$ (c) $16\mathrm{x}^{-8}\mathrm{y}^{-6}$

3. (a) $3670\ AED$ (b) \$700

4. (a) $\frac{3}{20}$ (b) $\frac{7}{20}$ (c) $\frac{9}{20}$

5. (a)

	1	2	3	4	5	6
H	$(H,1)$	$(H,2)$	$(H,3)$	$(H,4)$	$(H,5)$	$(H,6)$
T	$(T,1)$	$(T,2)$	$(T,3)$	$(T,4)$	$(T,5)$	$(T,6)$

(b) $\frac{1}{4}$

6. (a) $C = 56.52\ cm,\quad A = 254.34\ cm^2$ (b) $P = 25.70\ cm,\quad A = 39.25\ cm^2$

7. (a) $SA = 384\ cm^2,\quad V = 512\ cm^3$ (b) $SA = 150\ cm^2,\quad V = 108\ cm^3$

(c) $SA = 272\ cm^2,\quad V = 192\ cm^3$ (d) $SA = 1588.84\ cm^2,\quad V = 4559.28\ cm^3$

Year 9 Answer Sheet 2.4

1. (a) 3^{10} (b) 3^0 (c) 5^3

2. (a) 2^7 (b) $81x^{20}$ (c) $60\mathrm{x}^2\mathrm{y}^6$

3. (a) $5355\ AED$ (b) \$1300

4. (a) $\frac{1}{5}$ (b) $\frac{9}{20}$ (c) $\frac{11}{20}$

5. (a)

	1	2	3	4	5	6
H	$(H,1)$	$(H,2)$	$(H,3)$	$(H,4)$	$(H,5)$	$(H,6)$
T	$(T,1)$	$(T,2)$	$(T,3)$	$(T,4)$	$(T,5)$	$(T,6)$

(b) $\frac{1}{12}$

6. (a) $C = 56.52\ cm,\quad A = 254.34\ cm^2$ (b) $P = 17.99\ cm,\quad A = 19.23\ cm^2$

7. (a) $SA = 384\ cm^2,\quad V = 512\ cm^3$ (b) $SA = 160\ cm^2,\quad V = 100\ cm^3$

(c) $SA = 336\ cm^2,\quad V = 144\ cm^3$ (d) $SA = 1004.80\ cm^2,\quad V = 1884.00\ cm^3$

Year 9 Answer Sheet 2.5

1. (a) 2^7 (b) 8^3 (c) 7^0

2. (a) 2^8 (b) $81x^{16}$ (c) $60\mathrm{x}^4\mathrm{y}^{-2}$

3. (a) $4984\ AED$ (b) \$1200

4. (a) $\frac{3}{20}$ (b) $\frac{3}{4}$ (c) $\frac{9}{10}$

5. (a)

	1	2	3	4	5	6
H	$(H,1)$	$(H,2)$	$(H,3)$	$(H,4)$	$(H,5)$	$(H,6)$
T	$(T,1)$	$(T,2)$	$(T,3)$	$(T,4)$	$(T,5)$	$(T,6)$

(b) $\frac{1}{12}$

6. (a) $C = 25.12\ cm,\quad A = 50.24\ cm^2$ (b) $P = 15.42\ cm,\quad A = 14.13\ cm^2$

7. (a) $SA = 54\ cm^2,\quad V = 27\ cm^3$ (b) $SA = 164\ cm^2,\quad V = 120\ cm^3$

(c) $SA = 219\ cm^2,\quad V = 140\ cm^3$ (d) $SA = 1130.40\ cm^2,\quad V = 2797.74\ cm^3$

Year 9 Answer Sheet 2.6

1. (a) 2^{10} (b) 9^{-3} (c) 7^2

2. (a) 2^8 (b) $64x^{12}$ (c) $144\,\mathrm{y}^5$

3. (a) $4849\ AED$ (b) \$1000

4. (a) $\frac{3}{10}$ (b) $\frac{1}{2}$ (c) $\frac{7}{10}$

5. (a)

	1	2	3	4	5	6
H	$(H,1)$	$(H,2)$	$(H,3)$	$(H,4)$	$(H,5)$	$(H,6)$
T	$(T,1)$	$(T,2)$	$(T,3)$	$(T,4)$	$(T,5)$	$(T,6)$

(b) $\frac{1}{4}$

6. (a) $C = 25.12\ cm,\quad A = 50.24\ cm^2$ (b) $P = 23.13\ cm,\quad A = 31.79\ cm^2$

7. (a) $SA = 294\ cm^2,\quad V = 343\ cm^3$ (b) $SA = 118\ cm^2,\quad V = 70\ cm^3$

(c) $SA = 283\ cm^2,\quad V = 140\ cm^3$ (d) $SA = 1381.60\ cm^2,\quad V = 3419.46\ cm^3$

Year 9 Answer Sheet 2.7

1. (a) 6^9 (b) 6^3 (c) 2^2

2. (a) 2^8 (b) $256x^{16}$ (c) $54\mathrm{x}^{-5}\mathrm{y}^5$

3. (a) $4984\ AED$ (b) \$1100

4. (a) $\frac{1}{10}$ (b) $\frac{13}{20}$ (c) $\frac{3}{4}$

5. (a)

	1	2	3	4	5	6
H	$(H,1)$	$(H,2)$	$(H,3)$	$(H,4)$	$(H,5)$	$(H,6)$
T	$(T,1)$	$(T,2)$	$(T,3)$	$(T,4)$	$(T,5)$	$(T,6)$

(b) $\frac{5}{12}$

6. (a) $C = 31.40\ cm,\quad A = 78.50\ cm^2$ (b) $P = 43.69\ cm,\quad A = 113.43\ cm^2$

7. (a) $SA = 726\ cm^2,\quad V = 1331\ cm^3$ (b) $SA = 112\ cm^2,\quad V = 60\ cm^3$

(c) $SA = 232\ cm^2,\quad V = 160\ cm^3$ (d) $SA = 150.72\ cm^2,\quad V = 141.30\ cm^3$

Year 9 Answer Sheet 2.8

1. (a) 9^{10} (b) 4^{-1} (c) 8^7

2. (a) 2^7 (b) $81x^8$ (c) $30\mathrm{x}^{10}\mathrm{y}^{-6}$

3. (a) $3710\ AED$ (b) \$700

4. (a) $\frac{3}{10}$ (b) $\frac{7}{20}$ (c) $\frac{7}{10}$

5. (a)

	1	2	3	4	5	6
H	$(H,1)$	$(H,2)$	$(H,3)$	$(H,4)$	$(H,5)$	$(H,6)$
T	$(T,1)$	$(T,2)$	$(T,3)$	$(T,4)$	$(T,5)$	$(T,6)$

(b) $\frac{1}{12}$

6. (a) $C = 43.96\ cm,\quad A = 153.86\ cm^2$ (b) $P = 28.27\ cm,\quad A = 47.49\ cm^2$

7. (a) $SA = 96\ cm^2,\quad V = 64\ cm^3$ (b) $SA = 192\ cm^2,\quad V = 144\ cm^3$

(c) $SA = 311\ cm^2,\quad V = 210\ cm^3$ (d) $SA = 1243.44\ cm^2,\quad V = 2659.58\ cm^3$

Year 9 Answer Sheet 2.9

1. (a) 4^4 (b) 7^0 (c) 6^5

2. (a) 2^6 (b) $81x^{16}$ (c) $12x^9$

3. (a) $4693\ AED$ (b) $\$1000$

4. (a) $\frac{1}{4}$ (b) $\frac{1}{2}$ (c) $\frac{3}{4}$

5. (a)

	1	2	3	4	5	6
H	$(H,1)$	$(H,2)$	$(H,3)$	$(H,4)$	$(H,5)$	$(H,6)$
T	$(T,1)$	$(T,2)$	$(T,3)$	$(T,4)$	$(T,5)$	$(T,6)$

(b) $\frac{1}{12}$

6. (a) $C = 56.52\ cm,\quad A = 254.34\ cm^2$ (b) $P = 20.56\ cm,\quad A = 25.12\ cm^2$

7. (a) $SA = 54\ cm^2,\quad V = 27\ cm^3$ (b) $SA = 268\ cm^2,\quad V = 264\ cm^3$

(c) $SA = 270\ cm^2,\quad V = 150\ cm^3$ (d) $SA = 376.80\ cm^2,\quad V = 552.64\ cm^3$

Year 9 Answer Sheet 2.10

1. (a) 4^{11} (b) 5^{-4} (c) 9^3

2. (a) 2^7 (b) $256x^8$ (c) $56x^{10}y^3$

3. (a) $3971\ AED$ (b) $\$700$

4. (a) $\frac{3}{20}$ (b) $\frac{2}{5}$ (c) $\frac{17}{20}$

5. (a)

	1	2	3	4	5	6
H	$(H,1)$	$(H,2)$	$(H,3)$	$(H,4)$	$(H,5)$	$(H,6)$
T	$(T,1)$	$(T,2)$	$(T,3)$	$(T,4)$	$(T,5)$	$(T,6)$

(b) $\frac{1}{4}$

6. (a) $C = 18.84\ cm,\quad A = 28.26\ cm^2$ (b) $P = 30.84\ cm,\quad A = 56.52\ cm^2$

7. (a) $SA = 726\ cm^2,\quad V = 1331\ cm^3$ (b) $SA = 208\ cm^2,\quad V = 176\ cm^3$

(c) $SA = 262\ cm^2,\quad V = 210\ cm^3$ (d) $SA = 282.60\ cm^2,\quad V = 339.12\ cm^3$