This is the summer math packet for students entering 8th grade **Algebra 1**. The summer packet will be counted as one test grade. This packet is due back by Friday of the first week of school. Your child needs to show their work for each problem. No credit will be given if students do not show their work. There is an answer key so you can check their work.

| Packet 1 | Packet 2 | Packet 3 | Packet 4 | Packet 5 |
|---|---|---|---|---|
| 1. A | 1. D | 1. B | 1. C | 1. C |
| 2. D | 2. D | 2. A | 2. A | 2. C |
| 3. D | 3. C | 3. A | 3. C | 3. B |
| 4. C | 4. C | 4. C | 4. C | 4. A |
| 5. A | 5. D | 5. A | 5. D | 5. B |
| 6. B | 6. C | 6. A | 6. B | 6. A |
| 7. C | 7. B | 7. D | 7. A | 7. A |
| 8. C | 8. D | 8. C | 8. B | 8. A |
| 9. D | 9. C | 9. D | 9. C | 9. B |
| 10. A | 10. B | 10. B | 10. A | 10. C |
| 11. B | 11. D | 11. B | 11. B | 11. B |
| 12. A | 12. D | 12. B | 12. D | 12. C |
| 13. A | 13. C | 13. B | 13. D | 13. A |
| 14. C | 14. C | 14. A | 14. D | 14. C |
| 15. D | 15. C | 15. D | 15. D | 15. A |
| 16. A | 16. A | 16. B | 16. C | 16. D |
| 17. A | 17. B | 17. B | 17. D | 17. C |
| 18. A | 18. C | 18. D | 18. B | 18. B |
| 19. B | 19. D | 19. C | 19. C | 19. A |
| 20. B | 20. A | 20. B | 20. D | 20. B |
| 21. D | 21. C | 21. C | 21. B | 21. D |
| 22. C | 22. A | 22. D | 22. D | 22. D |
| 23. D | 23. D | 23. D | 23. C | 23. D |
| 24. C | 24. A | 24. D | 24. C | 24. C |
| 25. B | 25. C | 25. C | 25. D | |
| 26. B | 26. A | | | |
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## 8th Grade Algebra 1 Packet 1

**Multiple Choice**
*Identify the choice that best completes the statement or answers the question.*

**Identify the expression as a *numerical expression* or a *variable expression*. For a variable expression, name the variable.**

____ 1. $1 \cdot 12$
a. numerical expression
b. variable expression; *a* is the variable.
c. variable expression; there is no variable.
d. variable expression; *l* is the variable.

____ 2. $f \div 7$
a. variable expression; there is no variable.
b. numerical expression
c. variable expression; *g* is the variable.
d. variable expression; *f* is the variable.

**Simplify.**

____ 3. $3 - 15 \cdot 5$
a. 0 b. 78 c. 90 d. –72

____ 4. $[2 \cdot (10 + 5)] - 5$
a. 12.5 b. 20 c. 25 d. 120

**Evaluate.**

____ 5. $6t - 6$, for $t = 6$
a. 30 b. 43 c. 42 d. 29

____ 6. $47 + 2d$, for $d = 3$
a. 138 b. 53 c. 139 d. 54

____ 7. $a \div 4$, for $a = 32$
a. 9 b. 6 c. 8 d. 7

**Compare. Use >, <, or = to complete the statement.**

____ 8. $|10|$ ☐ –6
a. = b. < c. >

____ 9. What integer can be represented by 16 positive tiles and 26 negative tiles?
a. 42 b. –6 c. 10 d. –10

____ 10. The temperature in your town is 31°F. The radio announcer says that the temperature will drop 15 degrees. Write an expression to compute the predicted temperature. What will the temperature be?

a. 31 + (–15); 16°F
b. 15 + (–31); –16°F
c. 15 + 31; 46°F
d. 31 + 15; 22°F

____ 11. A submarine at the surface dives 375 ft and then another 175 ft. Express the final depth as an integer.

a. –525 ft
b. –550 ft
c. 550 ft
d. 525 ft

**Simplify the product.**

____ 12. 4(–7)

a. –28
b. –30
c. –26
d. 16

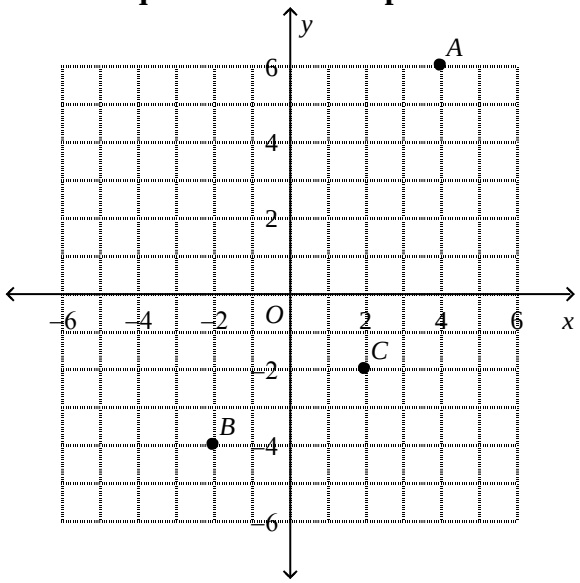
____ 13. $-4 \cdot 10 \cdot 6$

a. –240
b. –241
c. –238
d. –40

____ 14. Find the quotient –88 ÷ 11.

a. –10
b. –7
c. –8
d. –3

**In which quadrant does the point lie? Write the coordinates of the point.**




____ 15. *C*

a. quadrant IV; ( –2, 2)
b. quadrant III; ( –2, 2)
c. quadrant III; ( 2, –2)
d. quadrant IV; ( 2, –2)

____ 16. Suppose you average 52 mi/h traveling on the highway. If you drive for 5 hours, how far will you travel?

a. 260 miles
b. 250 miles
c. 350 miles
d. 240 miles

**Simplify the expression.**

____ 17. $6(6) + 6(4)$

a. 60 b. 10 c. 16 d. 12

____ 18. $3x + 3x$

a. $6x$ b. $9x$ c. $6x^2$ d. 6

____ 19. $7d + 12 - 4d - 3$

a. $19d - 7$ b. $3d + 9$ c. $3d^2 + 9$ d. $12d$

____ 20. Name the coefficients in the expression $4x + 9 - y$.

a. 4, 9, 0 b. 4, –1 c. 4 d. 9

____ 21. Name the constant(s) in the expression $7x + 9y + 3$.

a. $x$ and $y$ b. 7 c. 9 d. 3

**Solve the equation.**

____ 22. $8{,}000g = 48{,}000$

a. 40,000 b. 60 c. 6 d. 600

____ 23. Write an equation for the sentence below. Then solve the equation.

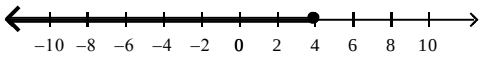
Thirteen multiplied by $h$ is one hundred and four.

a. $13h = 104$; 91
b. $104h = 13$; $\frac{1}{8}$
c. $13 \cdot 104 = h$; 1,352
d. $13h = 104$; 8

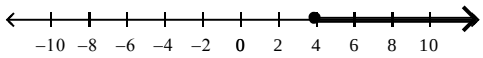
**Solve the inequality. Graph the solutions.**

____ 24. $a + 4 \geq 8$

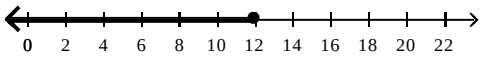
a. $a \leq 4$



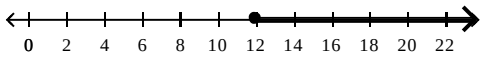

c. $a \geq 4$




b. $a \leq 12$




d. $a \geq 12$




**Solve the inequality.**

____ 25. $5n > -25$

a. $n > -20$ b. $n > -5$ c. $n > 30$ d. $n < -5$

____ 26. $\frac{r}{6} \leq 3$

a. $r \geq 18$ b. $r \leq 18$ c. $r \leq \frac{1}{2}$ d. $r \leq 9$

## 8th Grade Algebra 1 Packet 2

**Multiple Choice**
*Identify the choice that best completes the statement or answers the question.*

____ 1. Round 1<u>8</u>.79 to the underlined place.
a. 18 b. 17 c. 20 d. 19

____ 2. Estimate $11.49 - 5.15$ by rounding before you add or subtract.
a. about 8 b. about 7 c. about 5 d. about 6

____ 3. James received a box of supplies in his craft class, as shown in the table. Estimate the total mass of the supplies by rounding to the nearest unit.

| Item | Mass (g) |
|---|---|
| Scissors | 78.1 |
| Markers | 21.3 |
| Tape Measure | 32.6 |
| Paper | 56.6 |

a. about 187 g b. about 188 g c. about 189 g d. about 193 g

____ 4. Estimate $80.8 \div 8.9$ using compatible numbers.
a. about 8 b. about 10 c. about 9 d. about 11

____ 5. The formula $F = \frac{n}{4} + 37$ estimates the temperature $F$ in degrees Fahrenheit when crickets chirp $n$ times per minute. Use the formula to estimate the temperature when $n = 75$ chirps/min. Round to the nearest whole number, if necessary.
a. 58°F b. 53°F c. 52°F d. 56°F

**Solve the equation.**

____ 6. $33 = p - 6.71$
a. –39.71 b. –26.29 c. 39.71 d. 26.29

____ 7. $2.5 = d - (-20)$
a. 22.5 b. –17.5 c. 17.5 d. –22.5

____ 8. $\frac{m}{-4} = -2.95$
a. 1.05 b. 0.74 c. –6.95 d. 11.8

____ 9. You buy a shirt that costs $9.95. With tax, you pay $10.65. Write and solve an equation to find the amount of tax $x$ you paid.
a. $9.95 - x = 10.65$; $0.70 c. $9.95 + x = 10.65$; $0.70
b. $9.95 + 10.65 = x$; $20.60 d. $10.65 - x = 9.95$; $0.70

____ 10. Ichiro Suzuki's batting average in 2001 was .350. The all-time American League leading hitter was George Sisler of St. Louis in 1922. Write and solve an equation to find Sisler's batting average that year, given that his average $x$ was .072 more than Ichiro Suzuki's average in 2001.

a. $x - .350 = .072$; .278
c. $x - .072 = .350$; .422
b. $x + .072 = .350$; .278
d. $x + .072 = .350$; .422

____ 11. A baseball player was at bat 428 times in one season, and had a batting average of .344. The batting average formula is $a = \frac{h}{n}$, where $a$ is the batting average, $h$ is the number of hits, and $n$ is the number of times at bat. Use the formula to find the number of hits the baseball player made.

a. 135 hits
b. 128 hits
c. 144 hits
d. 147 hits

____ 12. The mass of 1 cubic centimeter of copper is about 8.9 g. About how many kilograms is the mass of 100 cubic centimeters of copper?

a. 890 kg
b. 8.9 kg
c. 0.0089 kg
d. 0.89 kg

____ 13. The height of a mountain is 6,384 meters. What is its height in millimeters?

a. 6.384 mm
b. 63.84 mm
c. 6,384,000 mm
d. 638,400 mm

**Simplify.**

____ 14. $5 + \left(5^4 + 8\right)$

a. 104976
b. 10008
c. 638
d. 28566

____ 15. $\frac{4^5}{4^2}$

a. 1,048,576
b. 16,384
c. 64
d. 16

**Evaluate.**

____ 16. $y^2 + 2y + 5$ for $y = -5$

a. 20
b. 230
c. –15
d. 25

**Find the GCF.**

____ 17. $14abc$ and $28a^2b^2c^3$

a. 14
b. $14abc$
c. $28abc$
d. $28a^3b^3c^4$

____ 18. 8, 10, and 15

a. 64
b. 80
c. 120
d. 150

____ 19. Write $\frac{12gh}{36g^2h^3}$ in simplest form.

a. $\frac{1}{3h^2}$ b. $\frac{1}{3}gh$ c. $\frac{1}{2gh^2}$ d. $\frac{1}{3gh^2}$

____ 20. 3 candidates run for president of the club and 5 candidates run for vice-president. How many different possibilities for filling the two positions are there?
a. 15 b. 5 c. 8 d. 3

**Evaluate. Write in simplest form.**

____ 21. $\frac{x}{y}$ for $x = 4$ and $y = 4$
a. –1 b. –1 c. 1 d. 1

____ 22. $\frac{y - x}{z}$ for $x = 4$, $y = 64$, and $z = 3$
a. 20 b. 21 c. 22 d. 30

____ 23. $\frac{6 - b}{3a}$ for $a = 10$, $b = -9$
a. $\frac{1}{10}$ b. $-\frac{3}{10}$ c. 2 d. $\frac{1}{2}$

**Simplify the expression.**

____ 24. $x^7 \cdot y^3 \cdot x^8 \cdot y^2$
a. $x^{15} \cdot y^5$ b. $x^{15} \cdot y^6$ c. $x^{56} \cdot y^5$ d. $x^{56} \cdot y^6$

**Compare. Use <, >, or = to complete the statement.**

____ 25. $25^2 \underline{?} \left(5^2\right)^2$
a. > b. < c. =

____ 26. $\left(2^7\right)^2 \underline{?} \, 2^{10} \cdot 2^2$
a. > b. < c. =

## 8th Grade Algebra 1 Packet 3

**Multiple Choice**
*Identify the choice that best completes the statement or answers the question.*

**Find the least common multiple.**

____ 1. 5 and 2
a. 7 b. 10 c. 2 d. 20

**Use a number line to compare the fractions. Use <, >, or =.**

____ 2. $-\frac{6}{7} \square -\frac{1}{7}$
a. $-\frac{6}{7} < -\frac{1}{7}$ b. $-\frac{6}{7} > -\frac{1}{7}$ c. $-\frac{6}{7} = -\frac{1}{7}$

____ 3. Order $\frac{-1}{3}$, $\frac{1}{5}$, and $\frac{-1}{2}$ from least to greatest.
a. $-\frac{1}{2}, -\frac{1}{3}, \frac{1}{5}$ c. $-\frac{1}{2}, \frac{1}{5}, -\frac{1}{3}$
b. $-\frac{1}{3}, -\frac{1}{2}, \frac{1}{5}$ d. $\frac{1}{5}, -\frac{1}{2}, -\frac{1}{3}$

**Simplify.**

____ 4. $8\frac{1}{2} + 4\frac{1}{2}$
a. $12\frac{1}{2}$ b. $12\frac{1}{4}$ c. 13 d. 14

____ 5. $13\frac{1}{3} - 7\frac{7}{9}$
a. $5\frac{5}{9}$ b. $6\frac{8}{27}$ c. $6\frac{2}{3}$ d. 7

____ 6. $4\frac{7}{8} + \left(-9\frac{1}{2}\right)$
a. $-4\frac{5}{8}$ b. 14 c. $-4\frac{1}{5}$ d. $-4\frac{1}{2}$

____ 7. $\left(k^3d^5\right)^5$
a. $k^8d^{10}$ b. $kd^{40}$ c. $kd^{13}$ d. $k^{15}d^{25}$

____ 8. $\left(-\frac{2q^4}{7}\right)^4$

a. $\frac{16q^8}{2,401}$ b. $-\frac{16q^{16}}{2,401}$ c. $\frac{16q^{16}}{2,401}$ d. $\frac{2q^{16}}{7}$

____ 9. $\frac{7}{24} - \frac{15}{90}$

a. $-\frac{8}{66}$ b. $-\frac{4}{33}$ c. $-\frac{1}{8}$ d. $\frac{1}{8}$

____ 10. John and Alan have a collection of *x* baseball cards. John has $\frac{x}{4}$ cards. What fraction of the cards does Alan have?

a. $\frac{x}{3}$ b. $\frac{3x}{4}$ c. $\frac{3}{4}$ d. $3x$

**Find the quotient. Simplify if possible.**

____ 11. $-\frac{6}{10} \div \left(-\frac{5}{7}\right)$

a. $-\frac{13}{50}$ b. $\frac{21}{25}$ c. $\frac{3}{7}$ d. $-2$

____ 12. $\frac{q}{7} \div \frac{q}{26}$

a. $\frac{7}{26}$ b. $\frac{26}{7}$ c. $\frac{q^2}{182}$ d. $\frac{26q^2}{7}$

____ 13. Sue needs $1\frac{1}{4}$ cups of flour for a batch of cookies. How many batches can she make with 9 cups of flour?

a. 6 batches b. 7 batches c. 4 batches d. 8 batches

**Solve.**

____ 14. $q + \frac{6}{5} = -\frac{7}{9}$

a. $-1\frac{44}{45}$ b. $-\frac{13}{45}$ c. $\frac{19}{45}$ d. $-\frac{13}{14}$

____ 15. $15\frac{3}{4} = T + 4\frac{5}{8}$

a. $11\frac{2}{3}$ b. $19\frac{1}{2}$ c. $11\frac{1}{4}$ d. $11\frac{1}{8}$

____ 16. $p + 7\frac{2}{4} = 4\frac{1}{2}$

a. $-2\frac{5}{8}$ b. $-3$ c. $-2\frac{1}{2}$ d. $11\frac{1}{2}$

____ 17. Find *P*(rolling 2 or 5) with one number cube.

a. $\frac{1}{2}$ b. $\frac{1}{3}$ c. $\frac{1}{6}$ d. 1

____ 18. Two U.S. states are not part of the continental United States. What percent of the fifty U.S. states are included in the continental United States?

a. 2% b. 13% c. 48% d. 96%

____ 19. Write 88.2% as a decimal.

a. 8.82 b. 882 c. 0.882 d. 8,820

**Write the decimal as a percent.**

____ 20. 0.798

a. 0.0798% b. 79.8% c. 7.98% d. 798%

**Write the fraction as a percent. Round to the nearest tenth of a percent if necessary.**

____ 21. $\frac{17}{40}$

a. 0.425% b. 4.25% c. 42.5% d. 235.3%

**Write an equation and solve. Round to the nearest tenth where necessary.**

____ 22. What is 35% of 63?

a. $n \cdot 0.35 = 63$; 180
b. $n = 35 \cdot 0.63$; 22.05
c. $n = 35 \cdot 63$; 2,205
d. $n = 0.35 \cdot 63$; 22.05

____ 23. The circulation of a newsletter decreased from 3,200 to 2,464. What was the percent of decrease in circulation?

a. 129% b. 77% c. 2.3% d. 23%

____ 24. All swimming equipment is on sale with a 35% discount. A snorkeling set regularly sells for $60. Find the discount.

a. $44.44 b. $39 c. $81 d. $21

____ 25. Video games are on sale for 35% off. If a particular game regularly sells for $99.50, what is the sale price?

a. $34.83 b. $96.02 c. $64.68 d. $134.33

## 8th Grade Algebra 1 Packet 4

**Multiple Choice**
*Identify the choice that best completes the statement or answers the question.*

**Solve the equation.**

____ 1. $5m + 4m = 72$
a. –72 b. 9 c. 8 d. 72

____ 2. $6d - 10d = 40$
a. –10 b. 36 c. 10 d. 44

____ 3. $-\frac{1}{3}m - 7 = 5$
a. –4 b. –15 c. –36 d. 6

____ 4. $\frac{5}{4}(a - 8) = \frac{2}{3}$
a. $6\frac{14}{15}$ b. $7\frac{1}{15}$ c. $8\frac{8}{15}$ d. $8\frac{2}{3}$

____ 5. $-6p - 21 = 3p - 12$
a. 1 b. 3 c. –3 d. –1

____ 6. Uma wants to buy a video game system for $270. She has $60 and is saving $30 each week. Solve the equation $30w + 60 = 270$ to find how many weeks $w$ it will take Uma to save enough to buy the system.
a. 6 weeks b. 7 weeks c. 9 weeks d. 8 weeks

____ 7. Miranda opened a checking account with $560 from her summer job. She withdrew the same amount each week for 13 weeks. Her balance was then $365. Solve the equation $560 - 13m = 365$ to find how much money $m$ she withdrew each week.
a. $15 b. $71 c. $39 d. $28

____ 8. Work-Out Corner has 5 more than 3 times as many exercise bicycles as The Gym. Together they have 21 bicycles. Solve the equation $x + 3x + 5 = 21$ to find the number of bicycles at Work-Out Corner.
a. 4 bicycles b. 17 bicycles c. 7 bicycles d. 25 bicycles

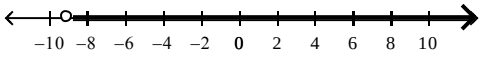
____ 9. The sum of three consecutive integers is 72. Find the integers.
a. 22, 23, 24 b. 25, 26, 27 c. 23, 24, 25 d. 24, 25, 26

____ 10. Sheila leaves on a long trip driving at a steady rate of 30 miles per hour. Her sister Allison leaves from the same location traveling to the same destination 2 hours later. She drives at a steady rate of 60 miles per hour. How long after Allison leaves home will she catch up to Sheila?
a. 4 hours b. 5 hours c. 3 hours d. 2 hours

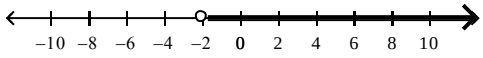
**Solve and graph the inequality.**

____ 11. $14 - 2x > 18$

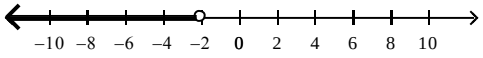
a. $x > -9$



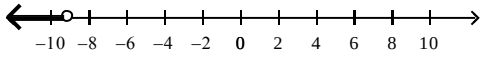

c. $x > -2$




b. $x < -2$

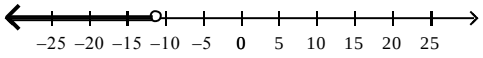



d. $x < -9$

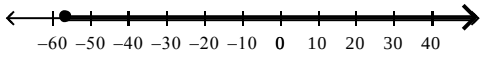



____ 12. $6.7 \geq -0.2x + 4.5$

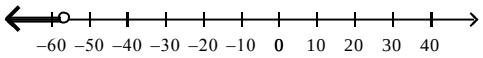
a. $x < -11$



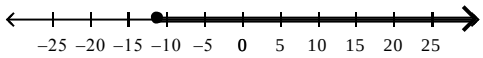

c. $x \geq -56$




b. $x < -56$




d. $x \geq -11$




____ 13. Solve the volume formula $V = lwh$ for $h$.

a. $h = Vlw$

b. $h = \frac{V}{l} + w$

c. $h = \frac{lw}{V}$

d. $h = \frac{V}{lw}$

____ 14. The formula for converting degrees Fahrenheit ($F$) to degrees Celsius ($C$) is $C = \frac{5}{9}(F - 32)$. Find $C$ for $F = 5°$.

a. –49°

b. –27°

c. 3°

d. –15°

____ 15. You drop a rock off a bridge. The rock's height, $h$ (in feet above the water), after $t$ seconds is modeled by $h = -16t^2 + 541$. What is the height of the rock after 2 seconds?

a. –64 feet

b. 605 feet

c. 509 feet

d. 477 feet

____ 16. The cost of renting a car is given by the formula $C = 50n + 0.15d$, where $C$ is the cost in dollars, $n$ is the number of days' rental, and $d$ is the distance driven in miles. How much would it cost to rent a car for a 15-day trip, and drive 475 miles each day?

a. $1,225.00

b. $1,818.75

c. $821.25

d. $121.25

____ 17. Jordan invested $1000 in a savings account. The interest rate is 6% per year. Find the simple interest earned in 4 years. Then find the total of principal plus interest.

a. $24,000.00; $25,000.00

b. $60.00; $1,060.00

c. $262.48; $1,262.48

d. $240.00; $1,240.00

____ 18. Find the balance on a deposit of $1,150 that earns 9% interest compounded annually for 2 years.

a. $1,357.00

b. $1,366.32

c. $2,102.32

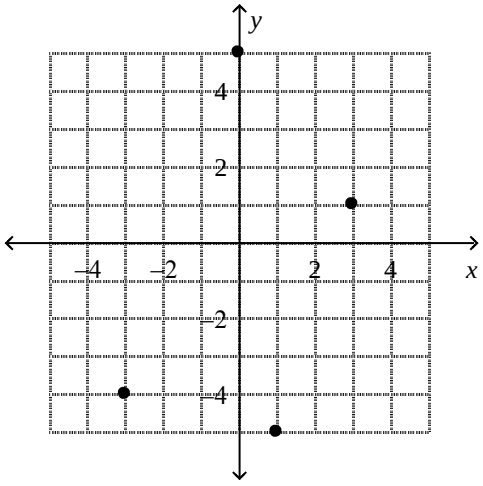
d. $2,507.00

**Graph the relation in the table. Then use the vertical-line test. Is the relation a function?**

____ 19.

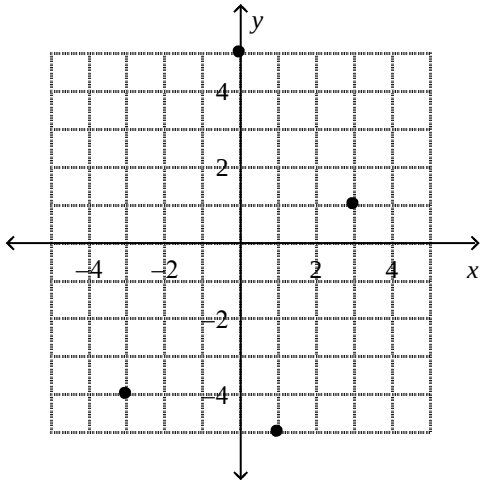
| ***x*** | ***y*** |
|---|---|
| –3 | –4 |
| 0 | 5 |
| 1 | –5 |
| 3 | 1 |

a.



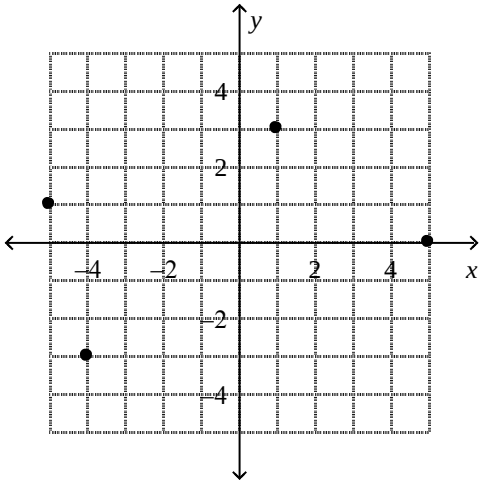

The relation is not a function.

c.



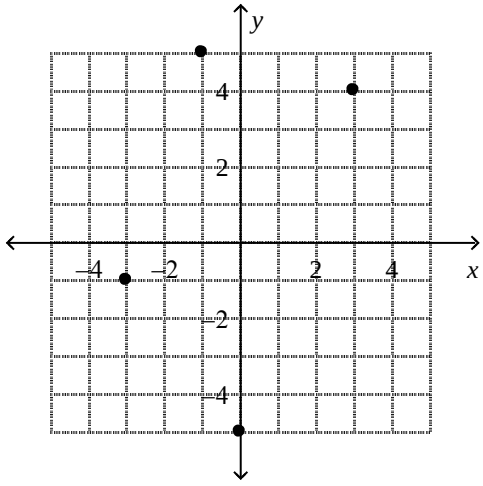

The relation is a function.

b.




The relation is not a function.

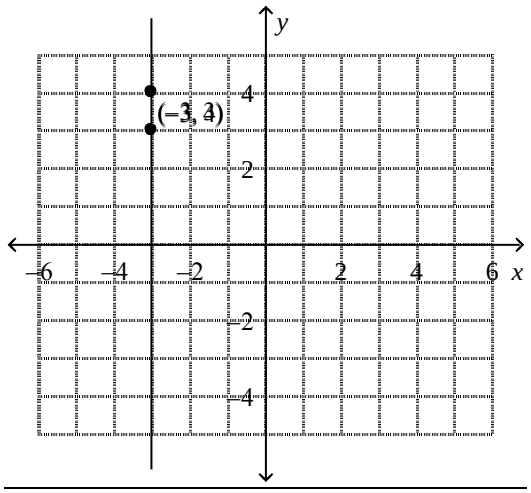
d.




The relation is a function.

**Find the slope of the line.**

____ 20.




a. 0 b. –3 c. 3 d. undefined

**Find the slope of the line through the pair of points.**

____ 21. $L(-9, 6)$, $M(-1, -9)$

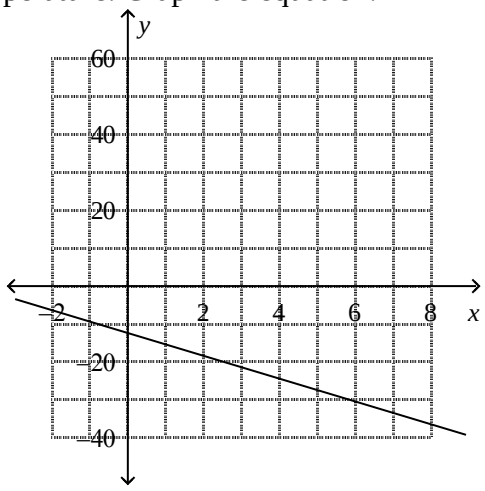
a. $\frac{3}{10}$ b. $-\frac{15}{8}$ c. $-\frac{8}{15}$ d. $\frac{15}{8}$

____ 22. $A(2, -3)$, $P(2, 9)$

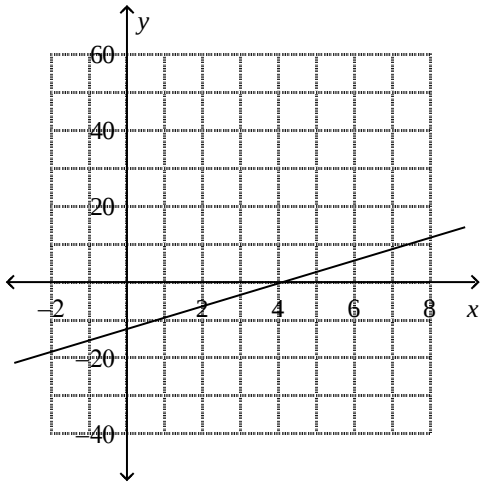
a. 0 b. $\frac{2}{3}$ c. $-\frac{1}{3}$ d. undefined

____ 23. The temperature on a particular day started at –13°F. It rose steadily by 3° each hour. The function $y = 3x - 13$ models the temperature, where $x$ is the number of hours and $y$ is the temperature. Graph the equation.

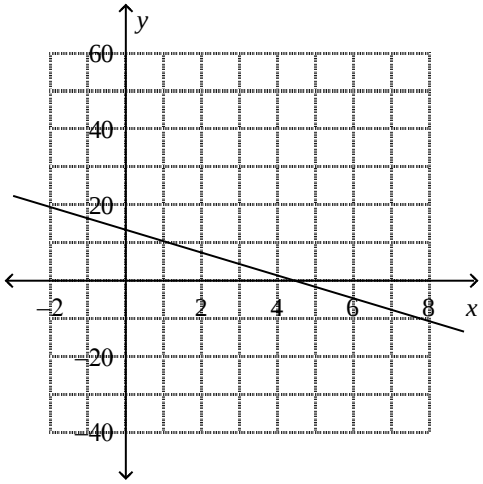
a.



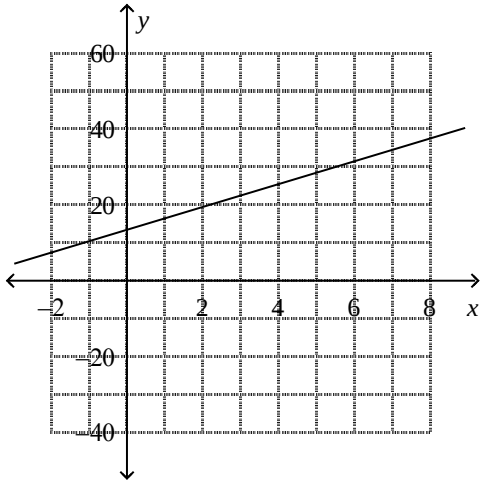

c.



b.



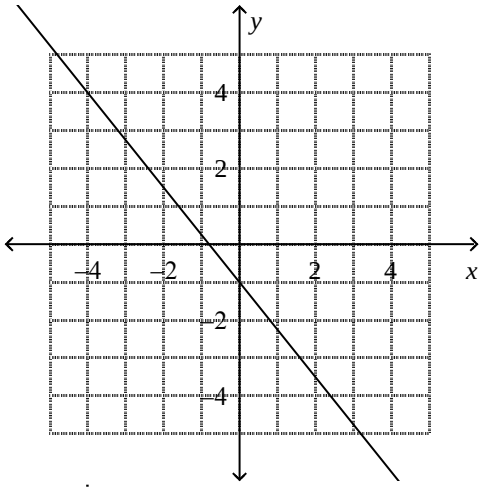

d.




**Identify the slope and *y*-intercept of the graph of the equation. Then graph the equation.**

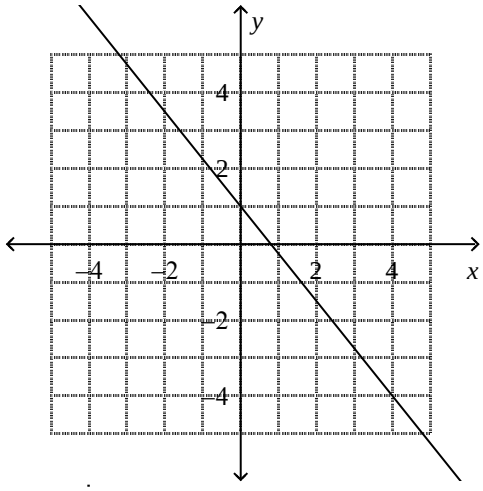
____ 24. $y = -\frac{5}{4}x + 1$

a. slope: $-\frac{5}{4}$; *y*-intercept: –1

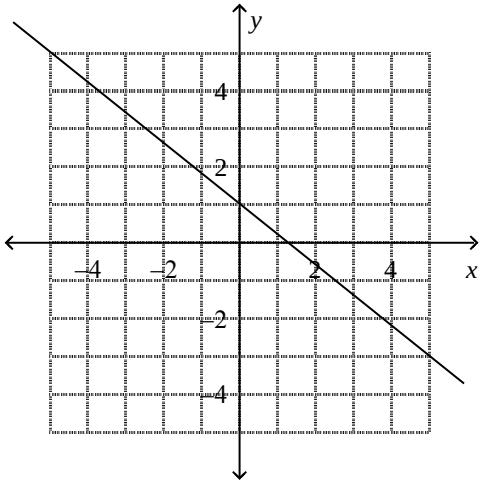


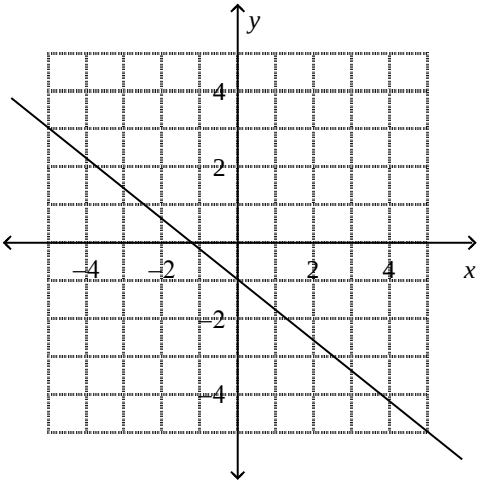

b. slope: $-\frac{4}{5}$; *y*-intercept: 1

c. slope: $-\frac{5}{4}$; *y*-intercept: 1




d. slope: $-\frac{4}{5}$; *y*-intercept: –1

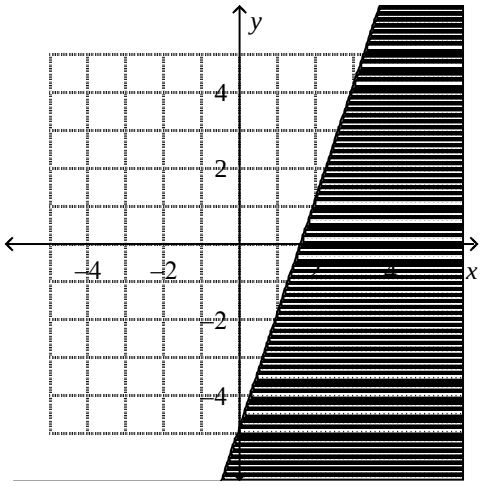


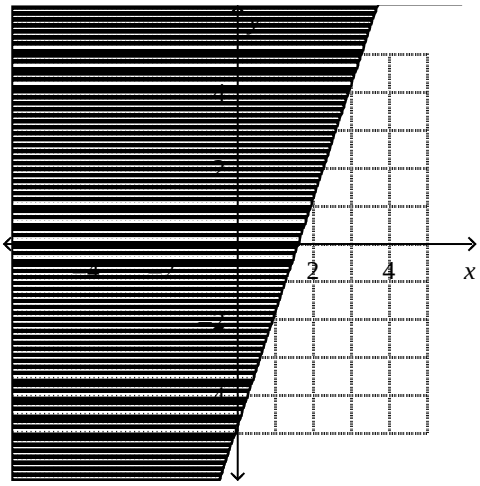

**Graph the inequality on a coordinate plane.**

____ 25. $-y \leq 3x - 5$

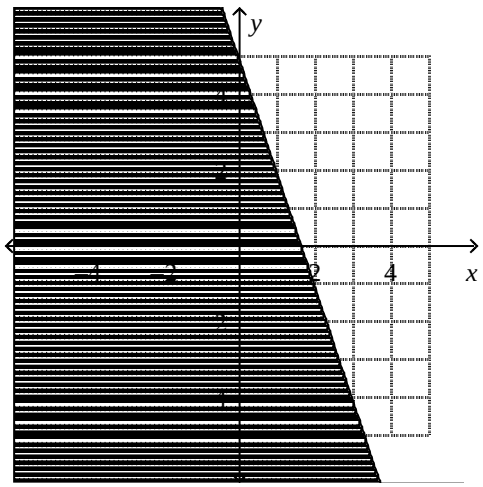
a.



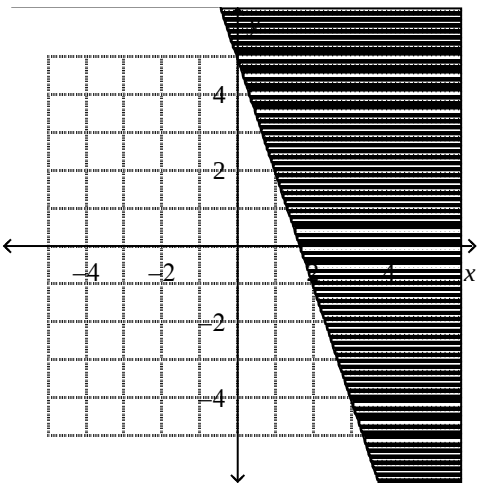

c.




b.




d.



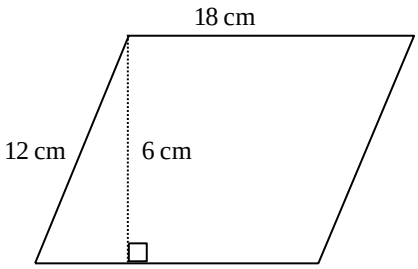
## 8th Grade Algebra 1 Packet 5

**Multiple Choice**
*Identify the choice that best completes the statement or answers the question.*

____ 1. The length of a rectangular room is 7.9 m and its width is 8.6 m. Find the area of the room.
a. 73.96 $m^2$ b. 62.41 $m^2$ c. 67.94 $m^2$ d. 33 $m^2$

**Find the area of the parallelogram.**

____ 2.




a. 60 $cm^2$ b. 216 $cm^2$ c. 108 $cm^2$ d. 72 $cm^2$

**Find the area of the triangle.**

____ 3.

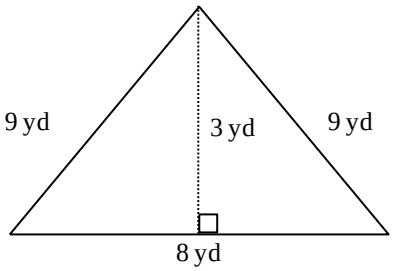



Diagram not to scale.

a. 24 $yd^2$ b. 12 $yd^2$ c. 26 $yd^2$ d. 36 $yd^2$

____ 4. A particular model of walkie-talkie can broadcast in a circular area. The radius of the broadcast area is 10,000 feet. Find the area of this circle to the nearest square foot. Use 3.14 for $\pi$.
a. 314,000,000 $ft^2$ c. 1,256,000,000 $ft^2$
b. 100,000,000 $ft^2$ d. 62,800 $ft^2$

____ 5. Find the surface area of the square pyramid.

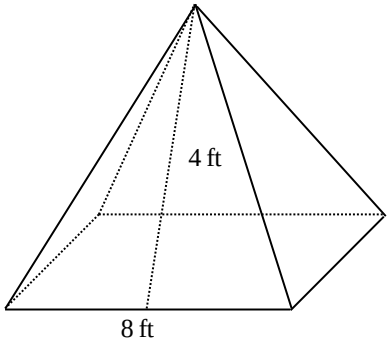



Diagram not to scale.

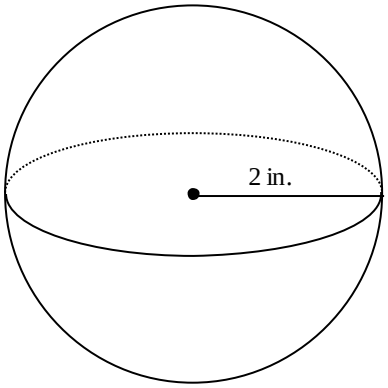
a. 64 $ft^2$ b. 128 $ft^2$ c. 80 $ft^2$ d. 96 $ft^2$

____ 6. Andy is building a model of a square pyramid for a class project. The side length of the square base is 11 inches and the slant height of the pyramid is 15 inches. What is the surface area of the model pyramid?

a. 451 $in.^2$ b. 203.5 $in.^2$ c. 286 $in.^2$ d. 330 $in.^2$

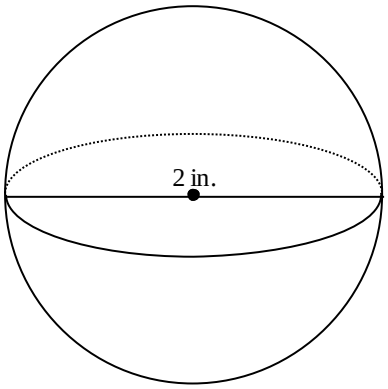
**Find the surface area of the sphere to the nearest square unit. Use a calculator.**

____ 7.




a. 50 $in.^2$ b. 13 $in.^2$ c. 201 $in.^2$ d. 25 $in.^2$

____ 8.



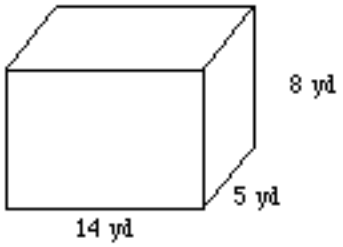

a. 13 $in.^2$ b. 50 $in.^2$ c. 6 $in.^2$ d. 3 $in.^2$

____ 9. Devin won a tiny bouncy ball at the school carnival. The diameter of the ball is 1.25 inches. To the nearest hundredth of a square inch, what is the surface area of the ball? Use 3.14 for $\pi$.

a. 19.63 $in.^2$ b. 4.91 $in.^2$ c. 12.27 $in.^2$ d. 9.81 $in.^2$

**Find the volume of the rectangular prism.**

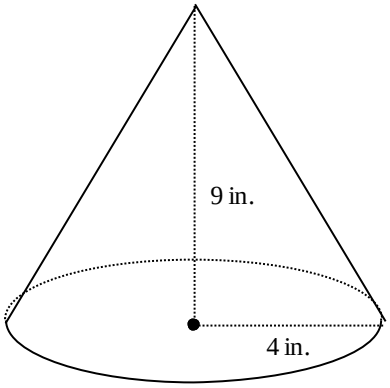
____ 10.




a. 108 $yd^3$ b. 540 $yd^3$ c. 560 $yd^3$ d. 444 $yd^3$

**Find the volume of the cone to the nearest cubic unit. Use a calculator.**

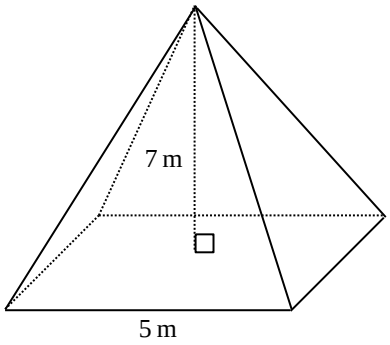
____ 11.




a. 1,810 in.$^3$ b. 151 in.$^3$ c. 452 in.$^3$ d. 276 in.$^3$

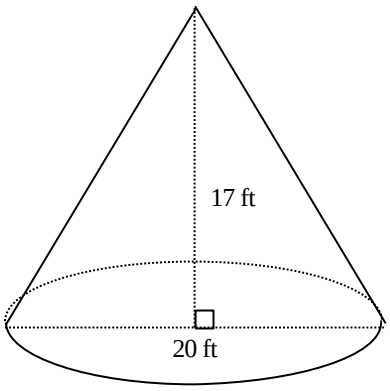
**Find the volume of the square pyramid to the nearest cubic unit.**

____ 12.




a. 175 m$^3$ b. 233 m$^3$ c. 58 m$^3$ d. 88 m$^3$

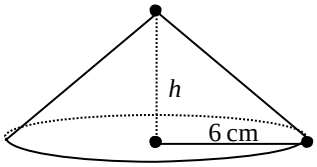
____ 13. The diagram shows the dimensions of a teepee. Find the volume of the building to the nearest cubic unit. Use 3.14 for $\pi$.




a. 1,780 ft$^3$ b. 1,382 ft$^3$ c. 21,363 ft$^3$ d. 5,341 ft$^3$

**Find the missing dimension. Round to the nearest unit. Use 3.14 for $\pi$.**

____ 14.




$V$ =150.72
Height = ?

a. 2.7 cm b. 12.56 cm c. 4 cm d. 1.3 cm

**Find the volume of the sphere to the nearest whole number. Use $\pi$ = 3.14.**

____ 15. $d$ = 4 cm

a. 33 $cm^3$ b. 268 $cm^3$ c. 50 $cm^3$ d. 201 $cm^3$

**Simplify the square root.**

____ 16. $\sqrt{16}$

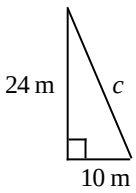
a. 16 b. 0.4 c. 40 d. 4

____ 17. $-\sqrt{25}$

a. –0.5 b. 5 c. –5 d. –25

**In the given right triangle, find the missing length.**

____ 18.

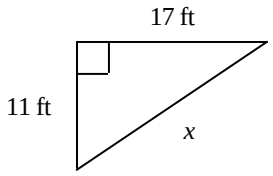



Not drawn to scale

a. 28 m b. 26 m c. 25 m d. 27 m

**In the given right triangle, find the missing length to the nearest tenth.**

____ 19.




Not drawn to scale

a. 20.2 ft b. 7.5 ft c. 11.7 ft d. 17.3 ft

**Combine like terms.**

____ 20. $(-7a^2 + 7a - 2) + (8a^2 - 2a - 3)$

a. $15a^2 - 9a - 1$
b. $a^2 + 5a - 5$
c. $-15a^2 + 9a + 1$
d. $-9a^2 + 15a + 6$

____ 21. $(-3y^2 - 7y - 9) - (4y^2 + 6y + 9)$

a. $y^2 - y$
b. $-9y^2 - 11y - 18$
c. $7y^2 + 13y + 18$
d. $-7y^2 - 13y - 18$

**Simplify the product.**

____ 22. $5b(6b - 10)$

a. $11b - 10$ b. $5b^2 + 6b - 10$ c. $-b - 10$ d. $30b^2 - 50b$

____ 23. $-5x(-6x^2 + 6x + 4)$

a. $-5x^2 - 11x + 4$
b. $30x^3 + 6x + 4$
c. $-5x^2 + x + 4$
d. $30x^3 - 30x^2 - 20x$

____ 24. $(x - 4)(x + 3)$

a. $x^2 - 7x - 12$
b. $x^2 + x - 12$
c. $x^2 - x - 12$
d. $x^2 - 12x - 1$